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CANADIAN GEOGRAPHICAL JOURNAL

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A winter day in the Ottawa district.

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Photograph by MALAK

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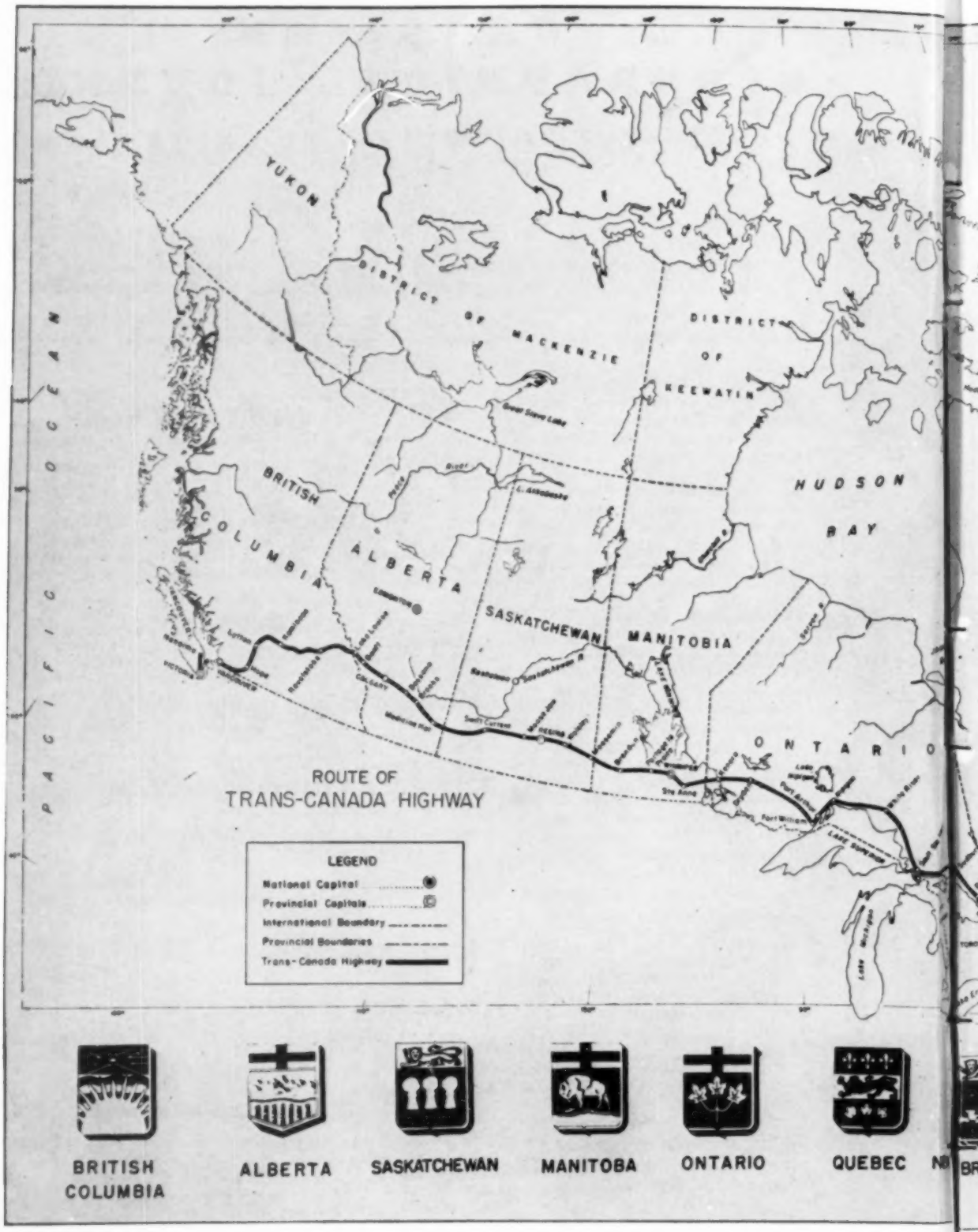
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International Boundary
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QUEBEC

The Trans-Canada Highway

by G. B. WILLIAMS

TRANSPORTATION across Canada has always been a formidable problem. The terrain is such as to make mass transportation easiest in a north-south direction. The necessity of providing transportation from ocean to ocean, within our territorial boundaries, however, has always been recognized and was a requirement of Confederation resulting in the construction of the Canadian Pacific Railway.

In a review of the history leading up to passing of the Trans-Canada Highway Act by the Government of Canada in 1949, it would almost appear that discussions on the possibility of the Trans-Canada road began as soon as the Canadian Pacific Railway was completed. Perhaps the first organized effort directed in this way was the formation of the Canada Highway Association in 1910 which advocated a highway across Canada. From that time, various automobile associations and good roads associations, with varying degrees of enthusiasm, have advocated the construction of this road. Practically every citizen, at some time or another, has said that it was a good idea or at least agreed with anyone who suggested it.

The practical demands for the highway, however, did not crystallize until the years succeeding the First World War. It is interesting to examine the background which created this situation. Following the First World War, there was the unprecedented expansion in motor vehicle registration. The maintenance and construction of roads was largely a municipal responsibility. The immediate demand was not for long distance travel, but for construction and improvement of local roads and interregional roads within the provinces. It was immediately evident that some provincial responsibility and control had to be exercised to connect up a farm to market road system. This was met by provincial grants to the municipali-

ties and in most provinces led to the establishment of a trunk highway system under provincial jurisdiction.

In recognition of the value of these roads to Canada at large, in that there were interprovincial connections, under the Canada Highway Act from 1919 to 1928, grants were made to the provinces by Canada for highway improvements.

By the time the depression arrived, vehicular traffic was of such proportions that interest in a national Trans-Canada Highway was very evident. During the depression years, the main objective of Government capital spending was to provide much needed employment. Federal Government spending in the provincial fields was co-ordinated under the Unemployment Relief Acts extending from 1930 to 1938 and included grants for highways. In these highway grants, specific reference was made to the Trans-Canada Highway and approximately 50 per cent of the total highway grants was spent on the then-designated route of the Trans-Canada Highway.

During the years of the Second World War, capital highway improvements were at a minimum both in the provincial and federal field. At the Federal-Provincial Conference in 1945, the question of federal aid to roads in general was discussed along with other matters dealing with the tax arrangements between the Federal Government and the provinces; however, no specific commitments were made in respect to road construction. As the provinces assumed the task of reconstruction of their highway plants to meet the needs of the heavier vehicle registration, increased loadings and the established freight trucking, the Trans-Canada Highway required immediate attention.

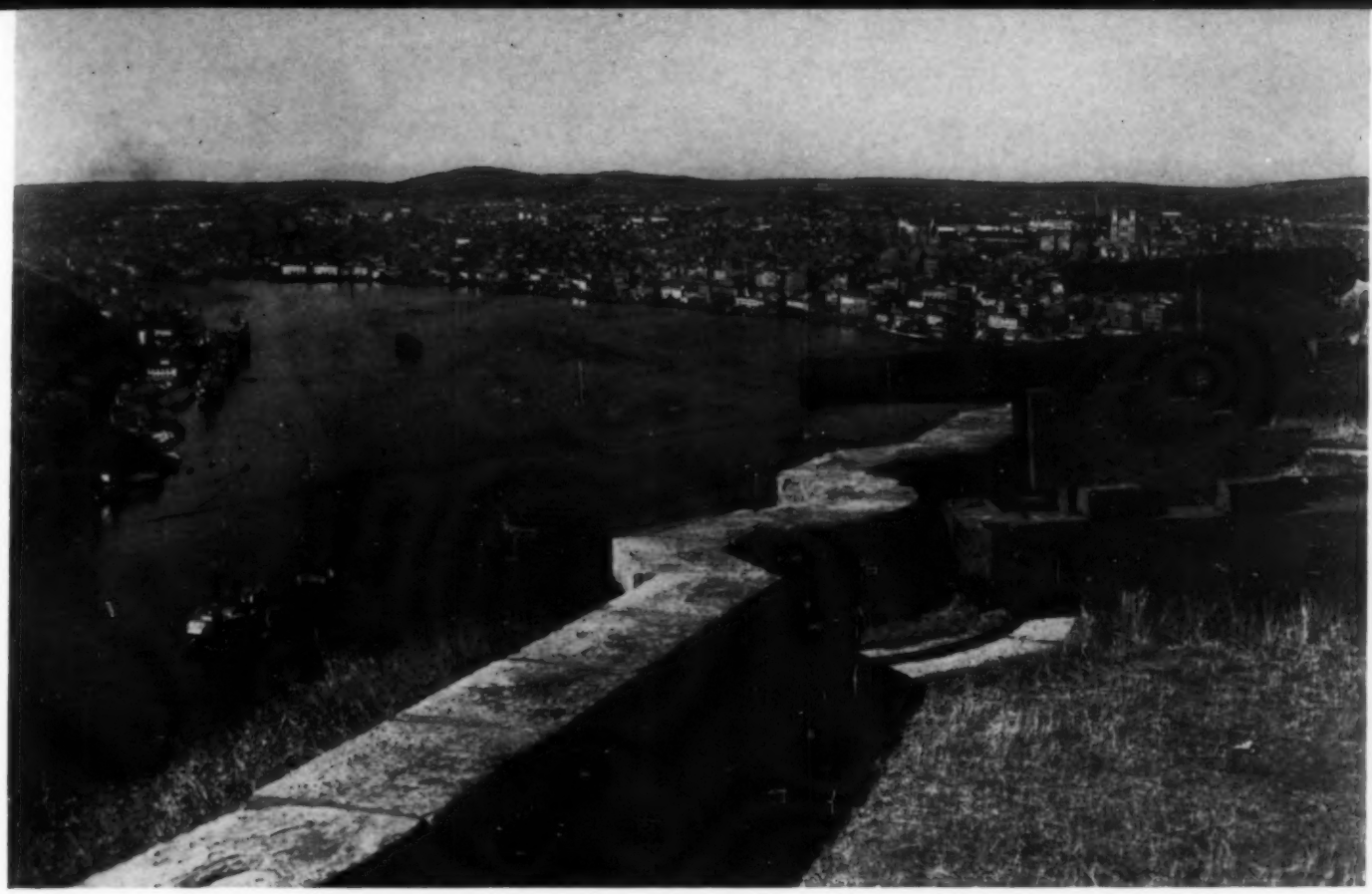
In 1948, judging the time to be right for such an undertaking, the Federal Government convened a meeting with the provinces to discuss the project. Based on this meeting and subsequent liaison between the Federal Government and the provinces "An Act to encourage and assist in the construction of the Trans-Canada Highway" was passed unanimously by Parliament in 1949 and given Royal Assent on 10 December. The terms of this Act were very different from previous Acts dealing with highways as it was very specific in its purpose to complete a Trans-Canada Highway.

With this same specific purpose in mind, a second Federal-Provincial Conference was held 15 and 16 December 1949 to prepare for the agreements authorized under the Trans-Canada Highway Act and under which the highway would be built. Previous agreements had resulted in highway construction to a variety of standards; routes were not necessarily well connected at provincial boundaries and the vigour with which construction was undertaken varied greatly between provinces. At this 1949 meeting, a set of minimum standards was mutually agreed upon, a time schedule and an operating procedure outlined. These were not dictated by the Federal Government, but were arrived at in full discussion with the representatives of the ten provinces.

The general concept was that the project would be a two-lane highway with the basic geometric standards and design criteria as given in Table I. The design was not elaborate but would provide an adequate highway for anticipated volumes and character of traffic to move within the limits of legal speeds with complete safety in so far as design could provide it. On short sections where local traffic conditions warranted additional traffic lanes, the Federal Government's participation was limited to the equivalent of the two lanes plus shoulders. Conversely, the Federal Government agreed to consider deviations from the

TABLE I
STANDARDS FOR TRANS-CANADA HIGHWAY

Right-of-Way	—	Minimum	100′ width
Curvature	—	Desirable 3°	Maximum 6°
Gradient	—	—	Maximum 6%
Sight Distance	— Vertical	Min. 600′	—
	— Horizontal	Min. 600′	
Pavement	— Width	Min. 22′	Maximum 24′
	— Depth	Min. 3″	—
	— Loading — Repeating 18,000 lb. axle		
Shoulders	— Width	Min. 5′	Maximum 10′
Bridges	— Loading	H20-S16	
	— Overhead Clearance	Min. 14′-6″	
	— Width — For length 30′ or less		Width of pavement plus shoulders
	— For length 30′-100′		Minimum 27′
	— For length over 100′		Minimum 24′



The harbour and city of St. John's, capital of Newfoundland, as viewed from Signal Hill.

standards on short sections where the terrain was such that the design standards could not be met within good engineering practice and economy. The time set for the construction of the highway was seven years dating from 10 December 1949.

In general, under the Act, the Federal Government was to pay 50 per cent of the cost of construction of the Trans-Canada Highway to the agreed standards. Provision was made for the acceptance of existing road along the approved route which was constructed to Trans-Canada Highway standard or for work which could be incorporated to advantage in the reconstruction. In such cases, the provinces could be reimbursed to the extent of 50 per cent of their prior expenditures.

The route was to be designated by the provinces subject to the approval of the Government of Canada and was, in general, to be the shortest practical east-west route through each province consistent with the needs of the provinces and the interest of Canada as a whole. The provinces would undertake the construction of the road. Both their design and construction procedures would be subject to review and approval of the Federal Government as a partner and arrangements were made for federal engineers to inspect the work during construction.

Following the December conference, the provinces of Manitoba, Saskatchewan, Alberta, Ontario, British Columbia, Prince Edward Island, signed agreements with the Federal Government for construction of the highway in April 1950. New Brunswick signed in May 1950, Newfoundland in June 1950 and Nova Scotia in May 1952.

At the time of signing, the designated route of the Trans-Canada Highway was 4,497 miles in the participating provinces, and eighty-three miles in Banff and Yoho National Parks. Since that time, there have been revisions in location and consequently in mileage. The estimated figures to date are given in Table II, subject to further revision on completion of detailed surveys. The estimated federal share at the time of signing was $150,000,000.

Under the original Act and Agreement, the Trans-Canada Highway was to be completed

Nestled in snug harbours indenting Newfoundland's rugged coastline are picturesque fishing villages. Petty Harbour, a few miles south of St. John's.

Historic Signal Hill, extreme eastern limit of the Trans-Canada Highway, overlooking the entrance to St. John's harbour and the Atlantic Ocean.

Hugging the bold shoreline of Cape Breton Island, Nova Scotia, the Cabot Trail cuts through the heart of the Rigwash Valley.

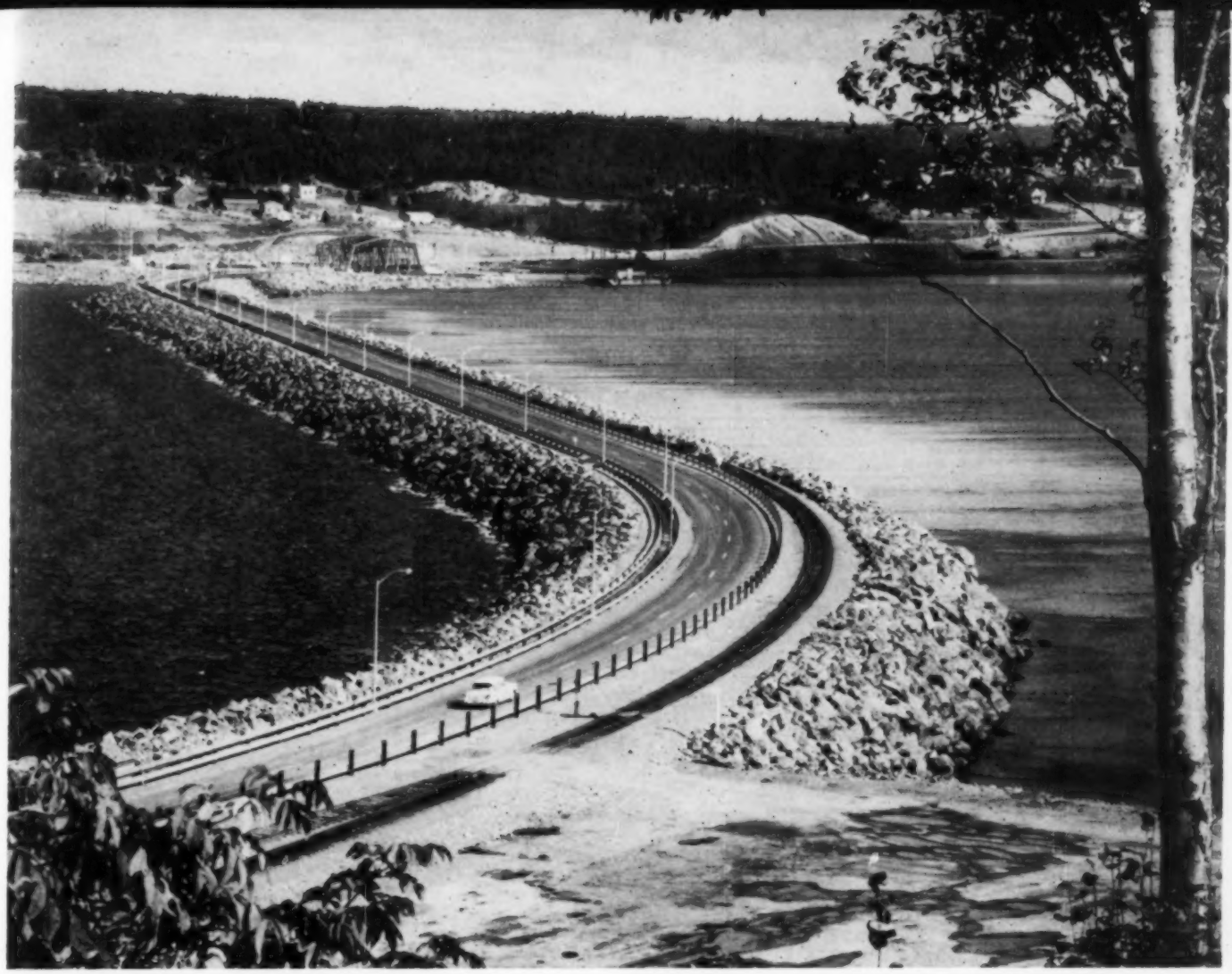
on 9 December 1956. With that date in sight, however, much remained to be done before it was completed. At the present time, approximately 41 per cent has been built. To understand why it has not been completed, it is necessary to look at what has been done and it is in a review of this that the answer can be found.

Commencing on the east in Newfoundland, there are in our youngest island province 590 miles of Trans-Canada Highway route. The majority of the terrain which the highway traverses is in the hard-rock Canadian Shield where road work is both difficult and expensive, a problem similar to that of Ontario's area north of Lake Superior, but without the saving grace of having a large area of heavily cultivated and industrialized land at each end. The fact that the terrain is difficult does not lessen the desire of the province to build a road, for it is needed for its development. At the present time, they have graded 237 miles of new highway and its effect can already be seen in the traffic from Port-aux-Basques through to Corner Brook and vehicles are pushing up to the contractors' equipment working on closing the untravelled gap between Gambo and Clarenville.

Nova Scotia signed the Agreement relatively recently. Its problem was one of reconstructing existing highway rather than starting from scratch as was the case in Newfoundland. Actual construction work began in 1954, with the emphasis placed on replacing narrow, substandard bridges. By now, however, the province has undertaken a considerable mileage of regrading, particularly on the section through Cape Breton Island between Port Hastings and

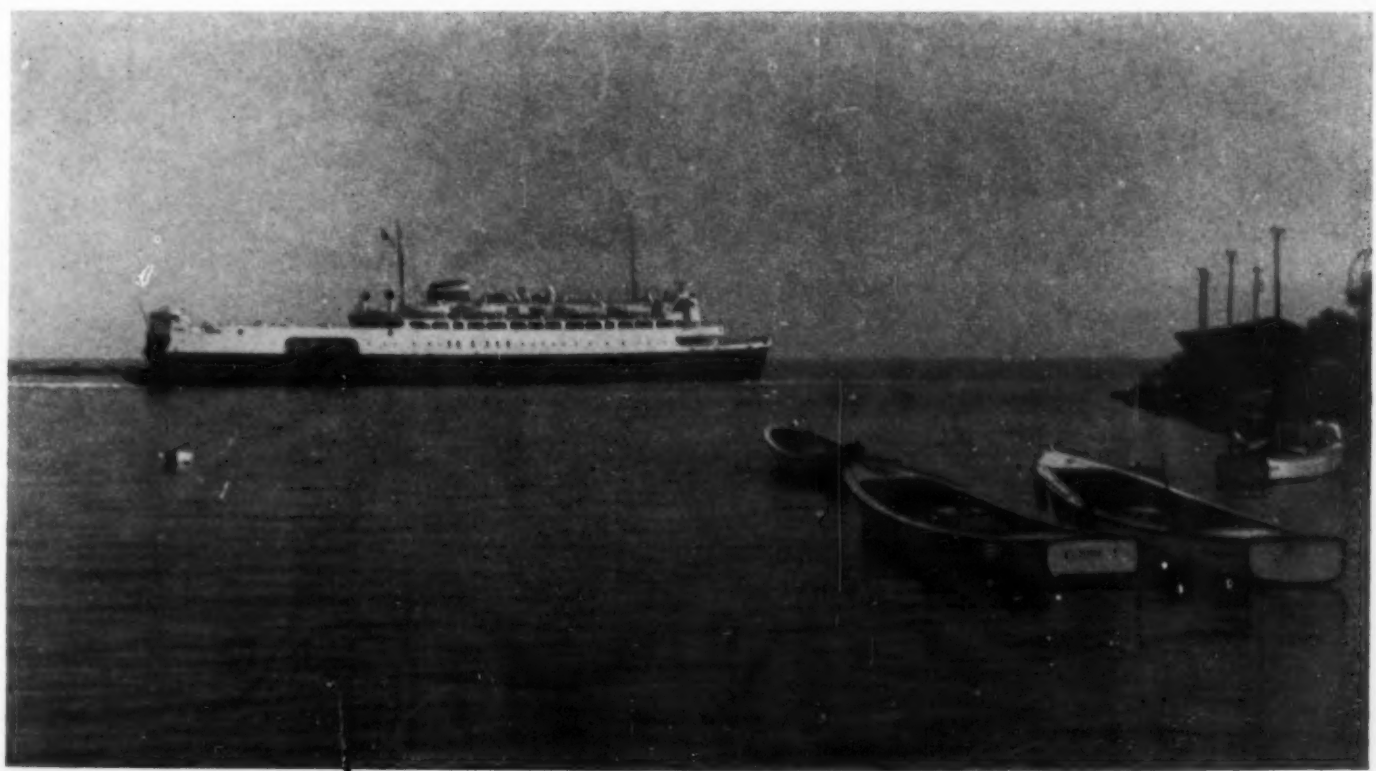
The sea and ships—inseparable elements of Nova Scotia life. A fisherman mends lobster traps at Clarke's Harbour, south-west of Lockeport.

Port Royal, near Annapolis Royal, Nova Scotia, and the replica of the original Habitation built by Champlain on this site in 1605.



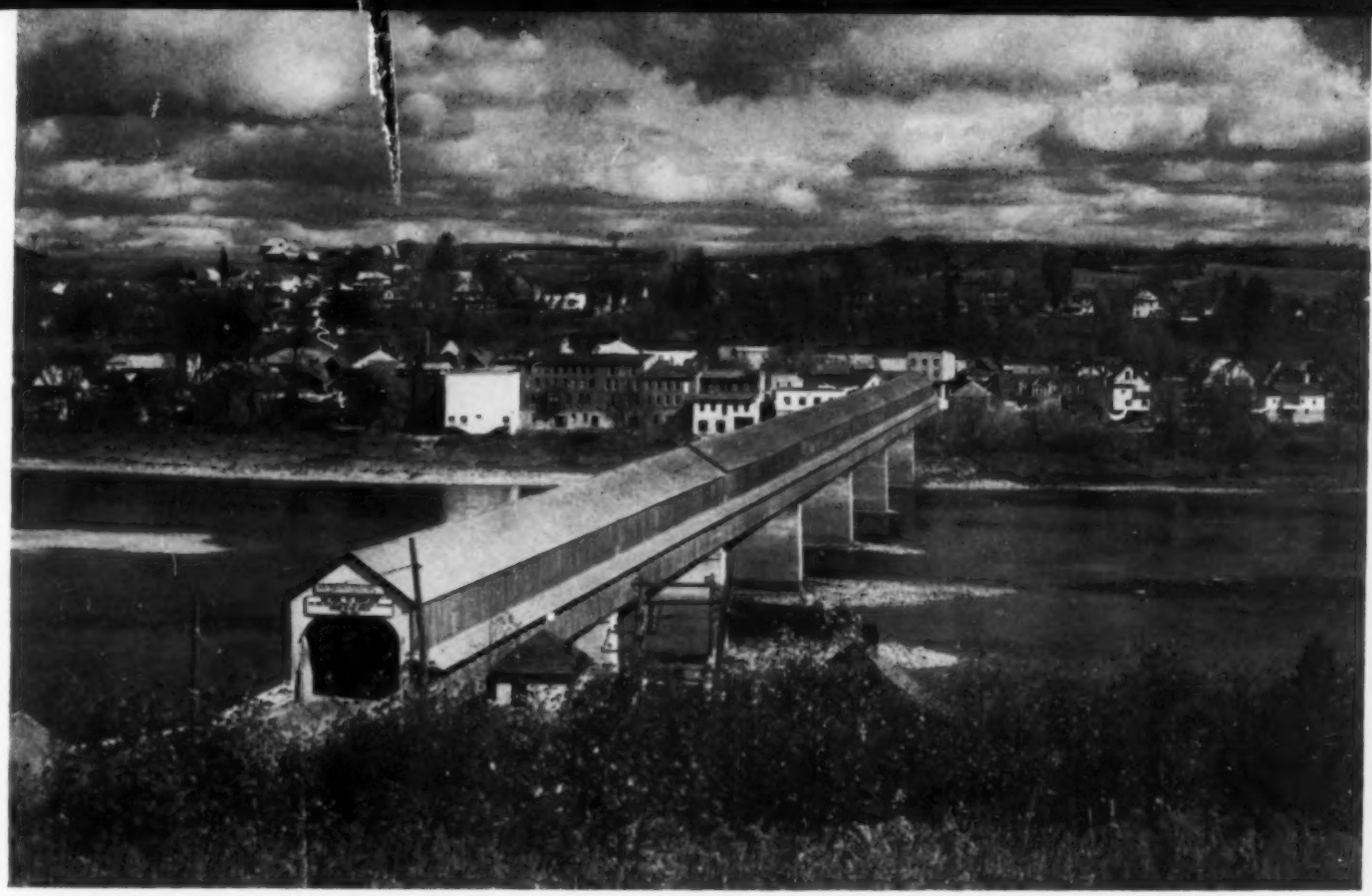
The famous Canso Causeway joins the mainland of Nova Scotia and Cape Breton Island. It is the deepest causeway made by man and machine in the world.

The ferry Abegweit *at Cape Tormentine, New Brunswick. Two ships provide a link between the terminus of the highway at the Cape and the western end of Prince Edward Island.*



The highway on Prince Edward Island skirts the south shore, never far from Northumberland Strait and its ever appealing bays and harbours.

Whether circling the coast or cutting inland, the Island highway reveals a panorama of colourful well-tended farmlands ribboned with spruce.



New Brunswick's Hartland Bridge, longest of its kind in the world, is to be left intact. A new bridge is being constructed for Trans-Canada Highway traffic.

Baddeck and in Cumberland County on the mainland. The Canso Causeway, which was a separate joint Federal-Provincial project not under the Trans-Canada Highway Agreement, now forms the link in the Trans-Canada between Cape Breton and the Nova Scotia mainland. Of the 317 miles of Trans-Canada Highway route within the province, seventy miles are now under construction.

The Province of Prince Edward Island has made particularly good progress with fifty miles of its seventy-one miles of highway completed. The sections from the New Brunswick-Prince Edward Island ferry terminal at Borden to Charlottetown and fifteen miles from the Woods Island ferry terminal at the opposite end of the Island with connections to Nova Scotia are completed and paved. These sections present a warm welcome for the thousands of tourists who enter the Island on its finest road and where they have a wonderful combination of scenery provided by the contrasting red earth and green grass and where even the uncultivated land looks like a garden with its thousands of wild flowers. Work on the balance of the highway is practically all under contract. The planning is done to provide for a combination causeway-bridge to replace the old veteran of wrought iron truss which has carried both rail and highway traffic over the Hillsborough Channel for the past forty years and prior to that date served as a railway structure elsewhere.

The eastern end of the Trans-Canada Highway in New Brunswick divides with one section going to Cape Tormentine and the ferry to Prince Edward Island and the other to connect with Nova Scotia. Because of this situation, traffic on the portion of the Trans-Canada east of Fredericton is heavier than to the west. With this in mind, the Provincial Government has concentrated its construction, working east from Fredericton and west to Long's Creek where the highway picks up the heavy United States traffic from Maine, and good progress is being made. West of Fredericton, the highway follows the Saint John River Valley where one of the major problems is the

ROADSIDE
TABLES

Above:—
The highway skirting the St. John River in New Brunswick offers infinite variety to the motorist. Scene near Sheffield where the highway is arched by elms.

Right:—
Many are the highway scenes in New Brunswick that impell the motorist to pause and view nature's handiwork. Scene near Maugerville.

Top left:—
A bend in the highway between Sheffield and Jemseg, New Brunswick.

Lower left:—
A roadside retreat near Sussex, New Brunswick, one of many provided for travellers on the highway.

From the Quebec boundary the highway passes through the capital city of Ottawa, Peterborough and Sudbury to Sault Ste. Marie. View of the Ottawa River and Canada's Parliament buildings.

A section of the Trans-Canada Highway borders the Ottawa River from Ottawa to the Quebec boundary. View of the highway east of Rockland, Ontario.

The Trans-Canada Highway in the Lake Superior region is under construction. A glimpse of the rugged scenery which will be visible from the highway.

necessity of two crossings of that river, one of which will replace the present Hartland Bridge, named "the longest covered bridge in the world". The location of the new crossing, however, is such that the old one will remain intact to be a favourite subject of touring photographers.*

In Ontario, there is a paved road from the Quebec boundary through Ottawa, Peterborough and Sudbury to Sault Ste. Marie. Much of it which previously was substandard has been relocated or rebuilt to Trans-Canada Highway standard. Other sections are now under construction. Through our capital city of Ottawa, the proposed Queensway route is to be designated as Trans-Canada. This section will be built as a "thruway" to a much higher standard than the normal Trans-Canada, as part of the National Capital Plan. Between Sault Ste. Marie and Fort William, north of Lake Superior, there is a gap. At the present time highway embankment is being built but

*See Editor's note at end of article for information about Quebec roads.

there is still approximately a 164-mile section not open to traffic, although fifty-two miles of this are under construction. This is in terrain similar to that of Newfoundland — the Precambrian Shield — where not only the actual road construction is a tremendous problem, but even the supply of materials and equipment becomes a problem of logistics.

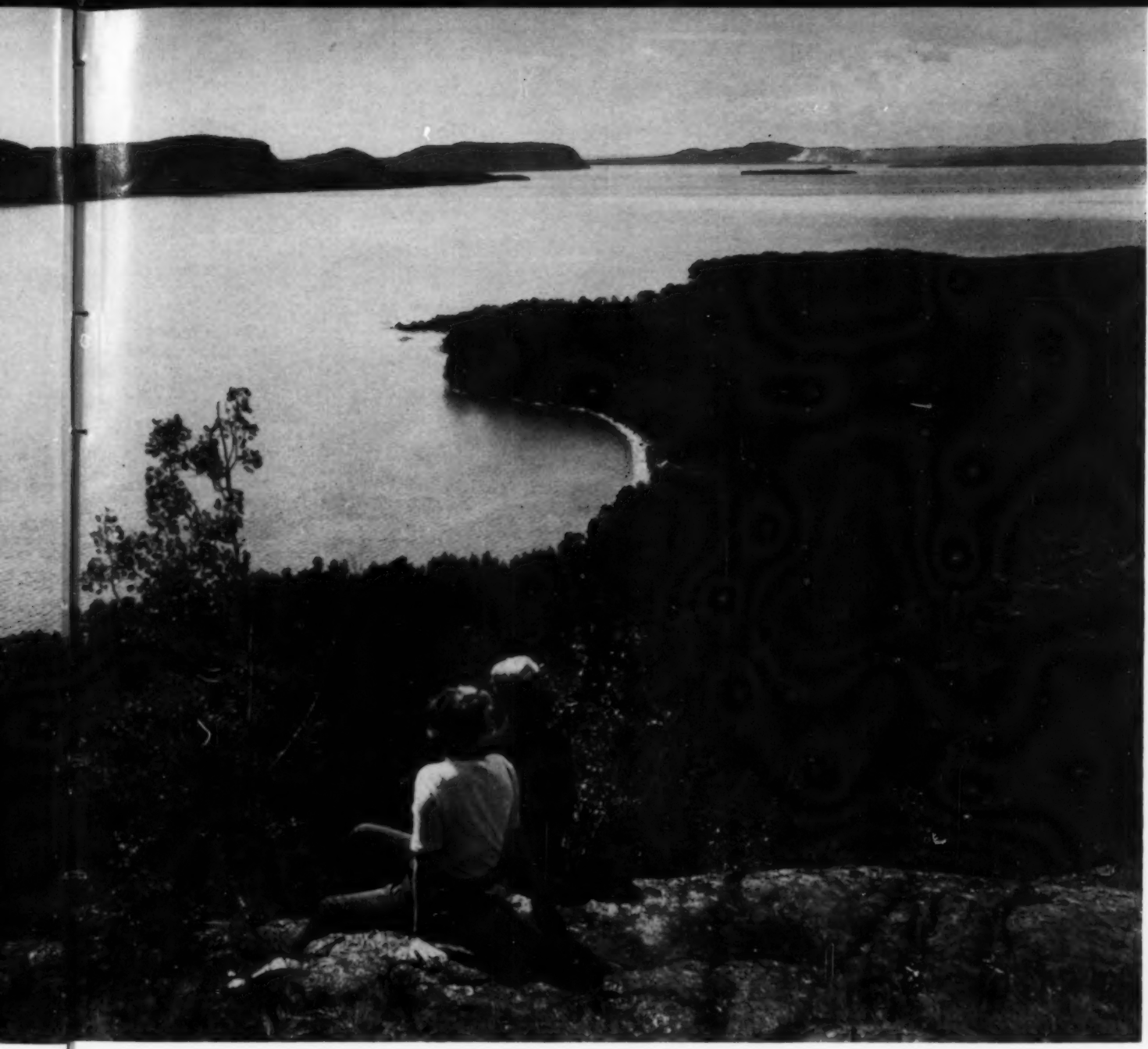
From Fort William westward to the Manitoba boundary there is paved road, some sections of which are now being reconstructed to Trans-Canada Highway standards.

In the Prairie Provinces (Manitoba, Saskatchewan and Alberta), we have a new location or else the old road completely reconstructed to the desired Trans-Canada Highway standard. Not all of it is complete at this date, but these three provinces in 1957 will have completed or under contract every mile of the highway within their boundaries for construction up to standard.

In Manitoba, from Winnipeg to the Ontario

Above:—
The north shore of Lake Superior in north-western Ontario, which for many years has fascinated travellers on the Canadian Pacific Railway, with the completion of the highway will surely be a Mecca for motorists. Something of the majesty of the setting is revealed in this view from Kama Hill, a few miles east of Nipigon.

Left:—
The giant pulpwood operations in the Lake Superior region are indicated by this view of a jack-ladder and surrounding booms of logs at Terrace Bay.

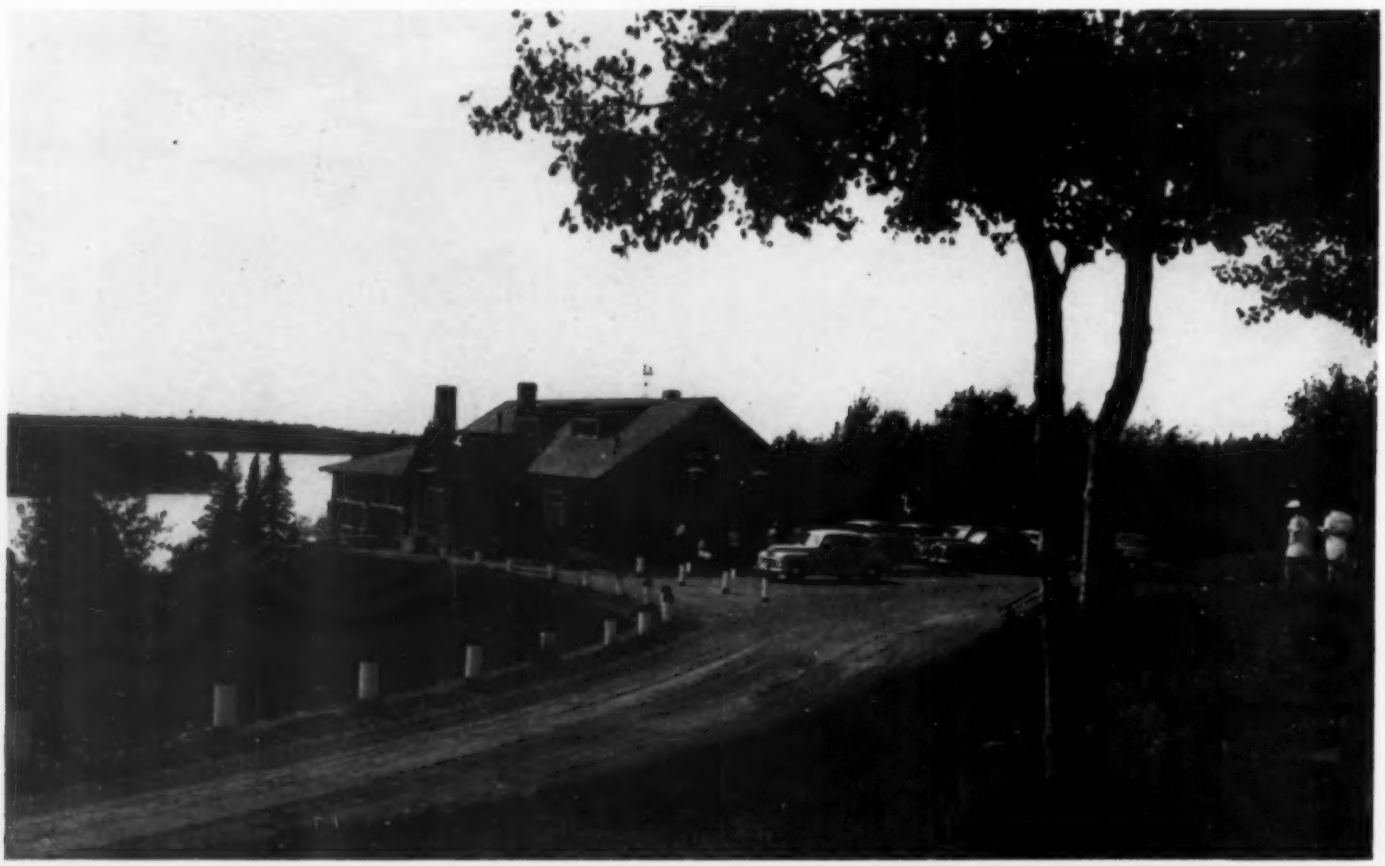


boundary, the most difficult construction is over. At its eastern end the highway invites tourists to the Whiteshell Forest area at the same time protecting the development of that park area by limited access to the highway and controlled intersections tying into existing park roads. Work has been held up in the Assiniboine Valley west of Winnipeg by successive floods in 1955 and 1956. Every advantage has been taken of the terrain to cross the flooding Assiniboine River in a rather novel way in which the bridges were built on dry land then the river was diverted under them in a controlled channel cutting across the ox-bows on the meandering river course.

In Saskatchewan, the highway was virtually complete in 1956. With a good pavement, wide shoulders and easy curvature, the new highway provides fine travelling for the 406 miles across that province and is drawing an increasing traffic of tourists, as well as the ever increasing east-west interprovincial truck haul

From the Ontario border to Winnipeg the most difficult construction in Manitoba is completed. An aerial view of the city of Winnipeg and the Red River.

West of Lake Manitoba are the 1,148 square miles of Riding Mountain National Park. From the club house of Clear Lake Golf Club, shown here, may be viewed a section of the park.



Scene on one of the lakes in Whiteshell Forest Reserve in eastern Manitoba. Many visitors have built permanent summer homes in this area. There are camp sites and trailer parks for tourists.

which formerly was diverted through the United States.

In Alberta, they have added a refinement to the standard of highway by providing bituminous-treated shoulders in addition to the twenty-four-foot pavement, which since has been adopted in some other provinces and by the Federal Government in the National Parks. Their highway is complete from the Saskatchewan boundary through to Calgary, and in 1956 they started the grading and bridge construction on a new location from Calgary south of the Bow River through to the east entrance of Banff National Park. Work on this section has been projected for the past year. The original inhabitants of the area, the Stoney Indians, had some views about all this. The new highway is to run through their reserve. They objected to providing this right-of-way as in some areas it cut up their grazing land. There was no war paint or tomahawks in the settlement of this negotiation, however, but rather a fairly negotiated property settlement and transfer of certain provincial lands which cleared the way for the Province of Alberta to let their contracts so that the grading operations are now well on the way.

The route of the Trans-Canada lies through Banff and Yoho National Parks and in these areas becomes the full responsibility of the Government of Canada, a distance of eighty miles with all of it now under construction. In locating and building the highway through this area, consideration was given to the problem of construction in mountainous terrain, as well as the highly developed and heavily used tourist area. It was necessary to locate and build a highway which would be capable of carrying a heavy volume of normal traffic, as well as the many tourists, not only travelling through the

Photograph on pages 60 and 61:—

A silver ribbon in the vast golden wheat fields, the Trans-Canada Highway stretches mile upon mile to ever-new horizons crossing the western prairies.

A clover-leaf intersection on the Trans-Canada Highway. An aerial view of the junction of the Trans-Canada Highway and Alberta's provincial Highway No. 2.

park, but visiting in the park. The highway provides pleasing vistas and is accessible to the many scenic areas, but on the other hand is not so close or constructed in such a way as to destroy natural beauty spots.

Along the wide areas of the Bow River Valley, this did not pose too great a problem. As the highway approaches the Great Divide, however, river valleys narrow down and the rock excavation required to provide the desired curvature, sight distance and gradients becomes more and more a problem. Special thought had to be given to providing adequate width for the tourists to stop and look. Passing lanes had to be built in areas where gradients would be long and heavy, so that slow-moving truck traffic would not interfere with the tourist. Controlled and protected intersections are being provided to tie in with the existing and proposed park highways.

Just over the Great Divide, in Yoho National Park, the highway runs along the Kicking Horse River and here comes in conflict with the railroad. As though the problem of cutting a highway out of the side of the mountain was not sufficient, there was the necessity of doing so in such a manner that the communication lines carrying telegraph, telephone and Canadian Broadcasting Corporation transmission would not be destroyed or disturbed, also that every protection would be given for the Canadian Pacific Railway operations.

This problem extends into British Columbia where the route of the highway continues along the Kicking Horse River to its junction with the Columbia at Golden. From Golden to

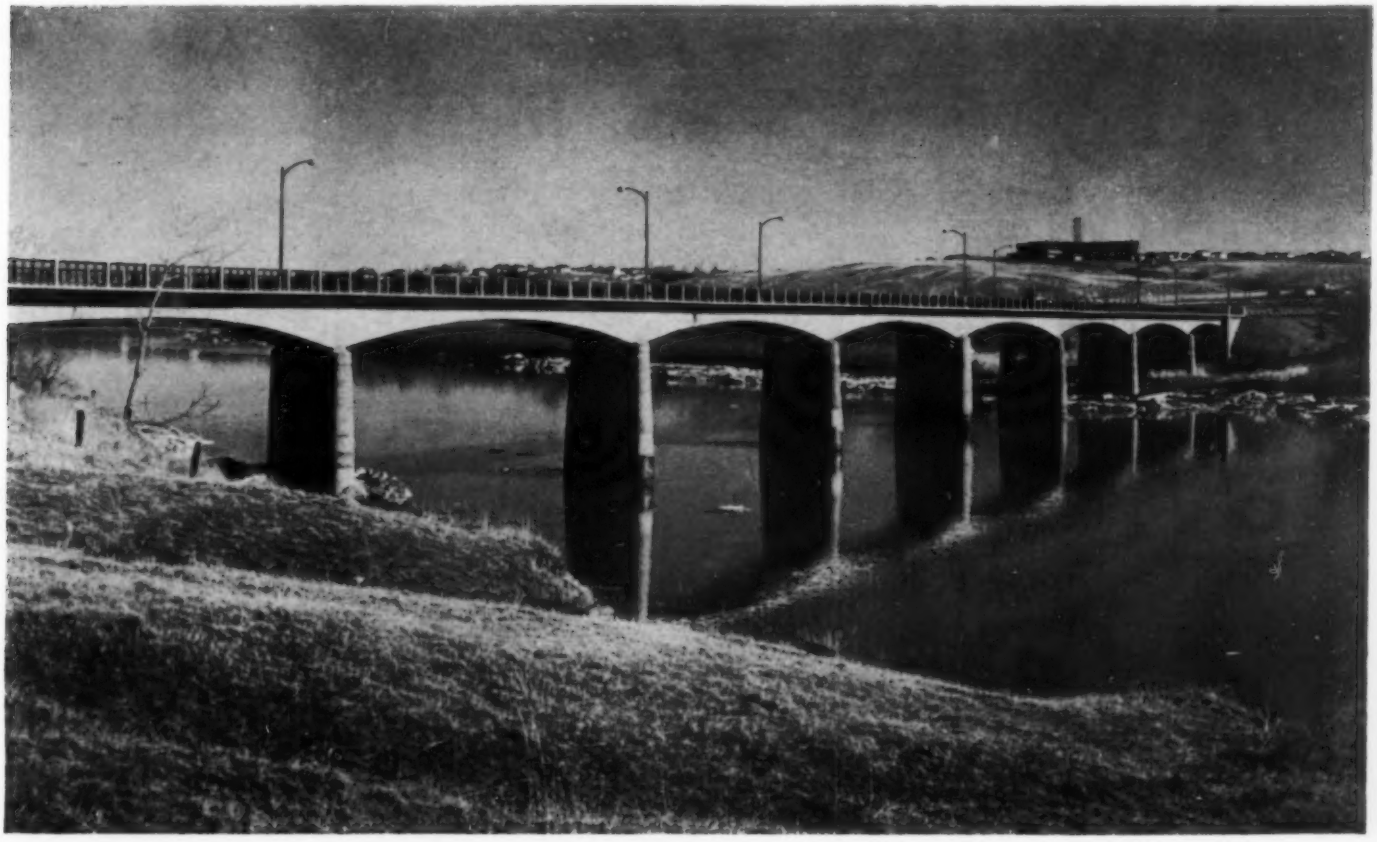
Revelstoke, there is the existing Big Bend highway — 196 miles in length — which would have to be reconstructed to bring it up to Trans-Canada standards and the proposed development of Mica Creek Dam could flood out ninety miles of the location. The decision has now been made to build the Trans-Canada through the Rogers Pass route approximately ninety miles in length between Revelstoke and Golden. Of this route, approximately thirty-seven miles are in Glacier and Revelstoke National Parks and, therefore, become the responsibility of the Federal Government. The major problem of construction on this route will be to provide protection from the snow and rock slides. Clearing operations along the route will be under way in 1957.

On the British Columbia section along the Kicking Horse River and west from Revelstoke, much of the highway has been reconstructed or improvements made to bring it to Trans-Canada Highway standard. The problems in building through the mountains of British Columbia and the National Parks are in the tremendous quantities of rock and earth excavation to "bench" into the mountain sides and the many structures required to cross streams and rivers. Location of the highway is restricted to the narrow confines of the river valleys, as in the case of the Fraser Canyon with each side already occupied by the Canadian Pacific Railway or Canadian National Railways. In these sections, some deviation from standard has been permitted but still a high type of highway is being built.

The highway continues along the Fraser River to Vancouver where it breaks for the ferry crossing at the Straits of Georgia, starting again on Vancouver Island at Nanaimo. On the island, the route follows along the east shore over the famed Malahat to Victoria, the western terminus.

This is a word picture of the Trans-Canada Highway from St. John's, Newfoundland to Victoria, British Columbia, 4,468 miles under construction by co-operative agreement between the participating provinces and the Federal Government which, as originally con-

Modern bridges such as this $800,000 structure spanning the South Saskatchewan River near Medicine Hat, Alberta, have been designed to carry Trans-Canada Highway traffic.



templated, was to be complete by 9 December 1956. The statistical summary of what has been done is given in Table II showing the mileage by provinces, and in Table III showing the contractual commitments for construction.

In reviewing these figures and the description of what is being done, the problem is evident. The provinces which have made most progress are those where the Trans-Canada traversed the province in an area where they needed and wanted a highway prior to the Agreement and, in most cases, had started some construction. That is not to say that the other provinces did not desire the highway. All did, as was evidenced at the 1949 Conference and all, with the exception of Quebec, have participated. The problem for the provinces with less progress is, however, that while they wanted the highway, the period in which it was required to be built coincided with a period in which the demands for other highways were also at their peak. For some of the provinces, demands elsewhere were such that they could not, by virtue of their own local emergency, provide their share of the cost of the Trans-Canada Highway. This is particularly true of those provinces where there was an existing paved road serviceable but below Trans-Canada Highway standards. In other provinces, the problem was simply one of insufficient funds to proceed at the rate they originally anticipated. This problem is emphasized by the fact that financial commitments to date are very much in excess of those originally contemplated for the present stage of completion. In other words, the project has turned out to be a much greater one than was originally realized.

It was to meet this problem that the Federal-Provincial Conference on the Trans-Canada Highway was convened at Ottawa by the Honourable Robert Winters in November 1955. The emphasis of the conference was on dealing with the gaps where there was no highway of any kind which, at that time, approximated 250 miles, and on an additional 1,477 miles which were not paved.

In considering the gaps, a review of the highway under construction showed that in no province was there more than 10 per cent of the mileage on which there was no road of any kind and, in fact, in most provinces there was a continuous road but not all completed to standard. To ensure a speedy closing of the gaps and in general to speed up reconstruction, the Federal Government proposed that it would pay 90 per cent of the cost of construction of 10 per cent of the mileage in each province. On the remaining 90 per cent of the mileage, the contribution would remain as formerly, at 50 per cent of the cost.

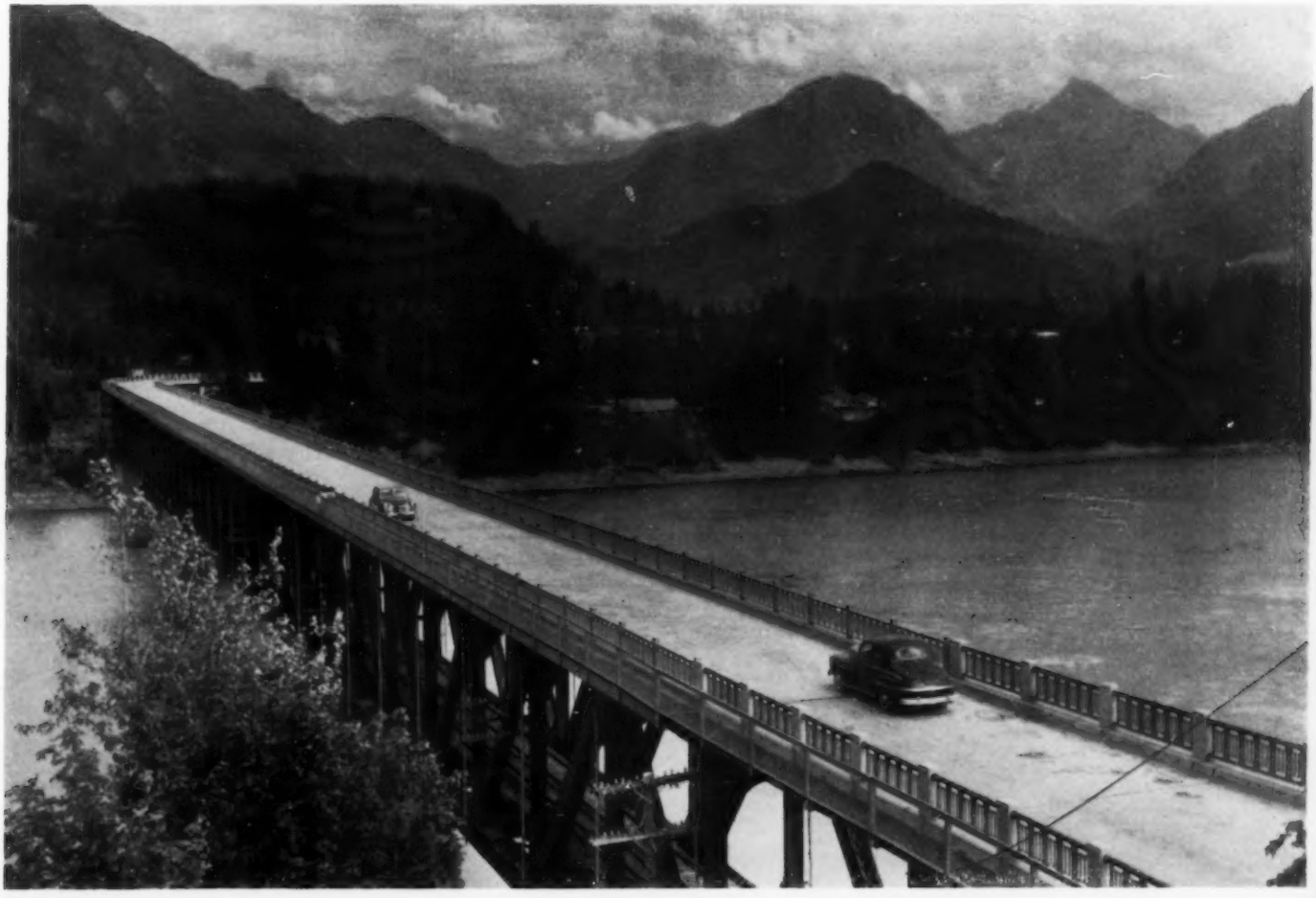
Further, to permit the provinces to concentrate on the unpaved sections, it was pro-

TABLE II
STATUS OF CONSTRUCTION ON TRANS-CANADA HIGHWAY
To 31 August 1956

	Nfld.	P.E.I.	Nova Scotia	N.B.	Ont.	Man.	Sask.	Alta.	B.C.	National Parks Yoho, Glacier, Banff, Revelstoke		Total
Estimated total mileage	590	71	317	390	1,436	309	406	282	550	80	37	4,468
Grading												
Mileage approved for contract	320	68	70	88	510	201	406	271	342	81	—	2,356
Equivalent mileage completed	237	65	51	75	438	181	389	220	292	42	—	1,990
Paving												
Mileage approved for contract	—	67	2	74	385	222	401	214	260	—	—	1,625
Equivalent mileage completed	—	49	—	67	328	188	325	210	181	—	—	1,348
Structures												
Number approved for construction	29	3	11	7	42	20	14	18	46	13	—	203
Number completed	25	3	6	3	23	20	14	18	41	7	—	160

Blasting the Trans-Canada Highway through the Rocky Mountains. Scene looking westward at Mile 25, near Field, in Yoho National Park, British Columbia, with Sherbrooke Creek in the foreground.

Bridge building is one of the major operations in the construction of the Trans-Canada Highway, particularly in British Columbia. A view of the bridge across the Fraser River on the outskirts of Hope.



posed that existing paved highway on the route, though below Trans-Canada Highway standards, could be left for later reconstruction. All new work participated in by the Federal Government would be to the previously agreed standard and the aim would be to provide as much mileage of this class as was within the capacity of each provincial government.

TABLE III
CONTRACTUAL COMMITMENTS FOR WORK ON TRANS-CANADA HIGHWAY TO 15 SEPTEMBER 1956

Province	*Total Commitment*
Newfoundland	$ 21,125,931.05
Prince Edward Island	6,355,120.24
Nova Scotia	6,790,870.00
New Brunswick	14,348,934.14
Ontario	91,516,661.99
Manitoba	22,022,421.91
Saskatchewan	28,705,339.85
Alberta	30,266,812.68
British Columbia	63,804,974.03
Total	$284,937,065.89

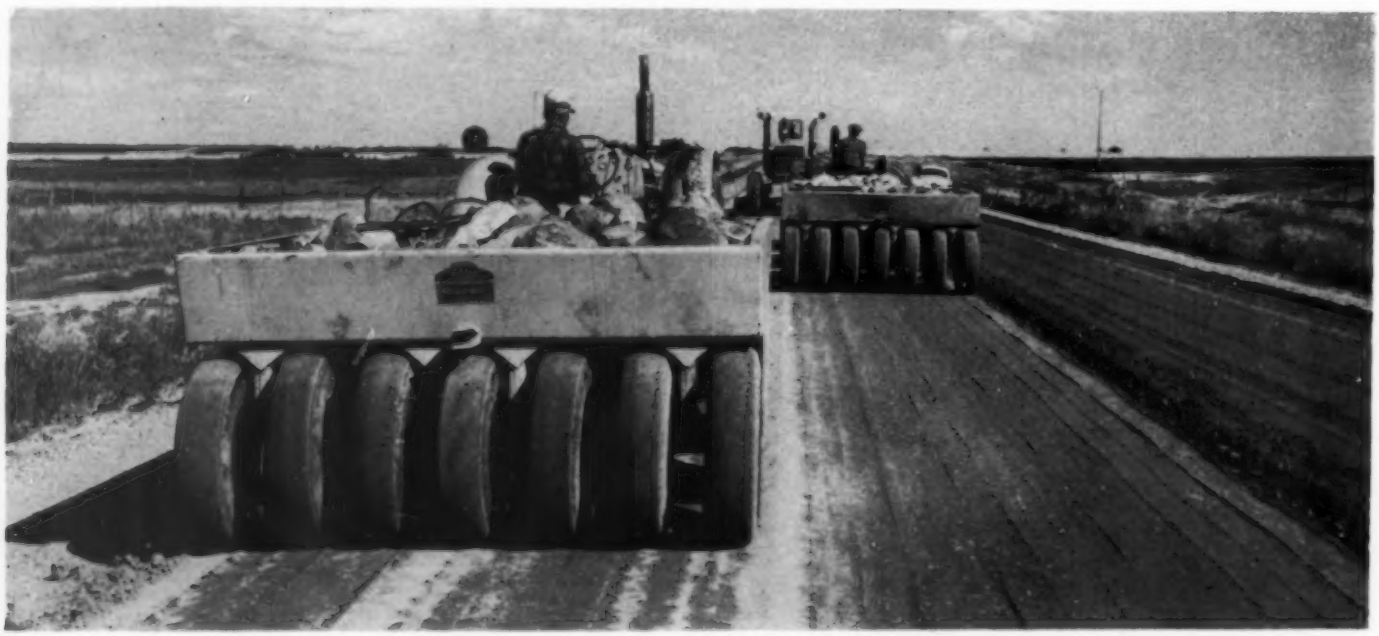
NOTE: These figures include both provincial and federal shares.

With these proposals, it was felt that an earlier completion of a paved highway across Canada could be achieved than was otherwise possible. These proposals were discussed in detail at the conference and a completion date for construction was set at 31 December 1960. The necessary amendments to the Trans-Canada Highway Act, providing for the increased Federal contribution, were passed by Parliament and assented to on 7 June 1956.

Since the Conference, each province has been re-appraising its own situation and considering mileage on which it felt the existing pavement would satisfy the demands of traffic for some time to come. It is evident that all provinces are interested in preparing a realistic, if in some cases a very tight schedule, to achieve a maximum of reconstructed highway, as well as a fully paved highway across their province by the end of 1960.

In the gap-closing operations, the Province of Ontario has established special engineering districts to speed the surveys and has let several contracts reducing the gap mileage. In Newfoundland, two grading contracts have been let reducing the untravelled portion of the route. The Prairie Provinces (Alberta, Saskatchewan and Manitoba), as well as Prince Edward Island, will have no difficulty in fully completing the highway to standard by 1960, whereas Nova Scotia, New Brunswick and British Columbia are carefully scheduling their

Saskatchewan's 406 miles of Trans-Canada Highway are now virtually complete. This scene showing preparations for paving is reminiscent of highway-building in the prairie province.



A view of the Fraser Canyon, British Columbia, where the highway follows the mighty Fraser River.

work to achieve a maximum of benefit to their provinces and Canada as a whole.

Because of geographical position, terrain, population distribution and variations in economy of the provinces, the achievement of a national highway is difficult; however, much has been done and now with a co-operative effort it should be fully completed in 1960.

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*Editor's footnote

While the Province of Quebec has not entered into an agreement with the Federal Government for the construction of the Trans-Canada Highway, the Deputy Minister of Roads for Quebec, Mr. A. Bergeron, has provided at the editor's request the following information regarding this important highway link:

"From the New Brunswick boundary to Rivière du Loup there are two paved roads; one between the village of Matapédia by way of Mont Joli and Rimouski (No. 6 and No. 10), and one from Ste. Rose du Dégelé, not far from Edmundston, New Brunswick, by way of Cabano (No. 2). From Rivière du Loup to Quebec, No. 2 connects with the capital city.

"From the City of Quebec to Montreal, there are four connecting routes: No. 2 runs along the north shore of the St. Lawrence River by way of Trois Rivières, Louiseville and Berthier; No. 3 follows the south shore of the St. Lawrence River by way of Deschaillons, Nicolet and Sorel; No. 9 runs inland by way of Drummondville and St. Hyacinthe; and a fourth also runs inland by way of Victoriaville (No. 5), Drummondville (No. 20) and St. Hyacinthe (No. 9). From Montreal to the Quebec-Ontario boundary there are two highways: No. 8 by way of Lachute and Hull, and No. 17 to the border of the Province of Ontario, southeast of Hawkesbury. Thus, the Province of Quebec is provided with routes between New Brunswick to the east and Ontario to the west."

Acknowledgement is made to the following for photographs used to illustrate this article: Alberta Government, B.C. Government Travel Bureau, Caterpillar Tractor Company, Bruno Engler, Richard Harrington, Manitoba Dept. Trade and Industry (George Hunter), Manitoba Travel and Publicity Bureau, National Film Board (Chris Lund, Gar Lunney, Frank Royal), Nova Scotia Film Bureau, Ontario Dept. of Travel and Publicity, Prince Edward Island Travel Bureau, Smith Studio.

Winter Sports in Alberta

by RALPH R. MOORE

Alberta Government photographs

ALBERTA, CANADA'S great oil province, becomes a superb winter vacation area with the first fall of lasting snow about mid-December. The cool bracing air that sweeps down from the Canadian Rockies draws men, women and children outdoors to participate in a variety of sports and winter activities throughout the entire province.

The average January temperature at Edmonton is about 17°F. Although temperatures sometimes fall into the twenties and thirties below zero, this is the exception rather than the rule. Zero temperatures in Alberta are not usually uncomfortable because the atmosphere is very dry. (Temperatures from zero to ten or even twenty degrees below zero are not felt so keenly as those of twenty above in maritime or lake regions where humidity is relatively high.)

When the frequent warm Chinook winds from the Pacific drive out the wintry air, the thoughts of many Albertans turn expectantly to a day in the brilliant sunshine. On holidays and weekends many pack sports equipment and food in their automobiles and drive into the country, there to enjoy invigorating recreation on snowy slopes and countless lakes with ice as smooth as glass. Afterward they often gather round cheering fires to roast hot dogs, marshmallows, corn and potatoes. It is not unusual also to detect the delightful odour of freshly caught fish frying in the open, for Alberta's fishing season extends throughout the year and many a winter day is spent ice-fishing for perch, walleye or northern pike.

When the sun begins to sink over the horizon in the early evenings and brisk cool air settles over the land, residents turn to various indoor sports. Curling is enjoyed by thousands, young and old alike. Virtually every community has an excellent curling rink, whether it is the elaborate artificial rink of a metropolitan centre or the one-or-two-sheet kind of a small town. Cries of "Easy now . . . easy!" rising to an ecstatic "Never leave 'er . . . sweep, sweep, sweep!" echo and re-echo through the clear night air.

Opposite:—As enchantingly beautiful in winter as in summer, Lake Louise is a favourite resort of many skiers.

Right:—Mule deer, elk and moose roam the national parks, some so tame that they will eat from human hands.

From early in the new year to the end of the season, bonspiels are the order of the day. Although many curlers take the game very seriously, a spirit of fellowship and good sportsmanship generally prevails, whether it is a club match or the final competition to represent the province at the famous "Brier".

The fact that Alberta is one of the most curling-conscious provinces in Canada is easily recognized by newcomers walking down the streets of a community. "Tin-can 'spiels" are held by the small fry on corner lots or school playground rinks. High school students organize after-school leagues. Adults fill the rinks six nights a week. In addition to curling, there is hockey, and there are also sleighing parties and colourful carnivals.

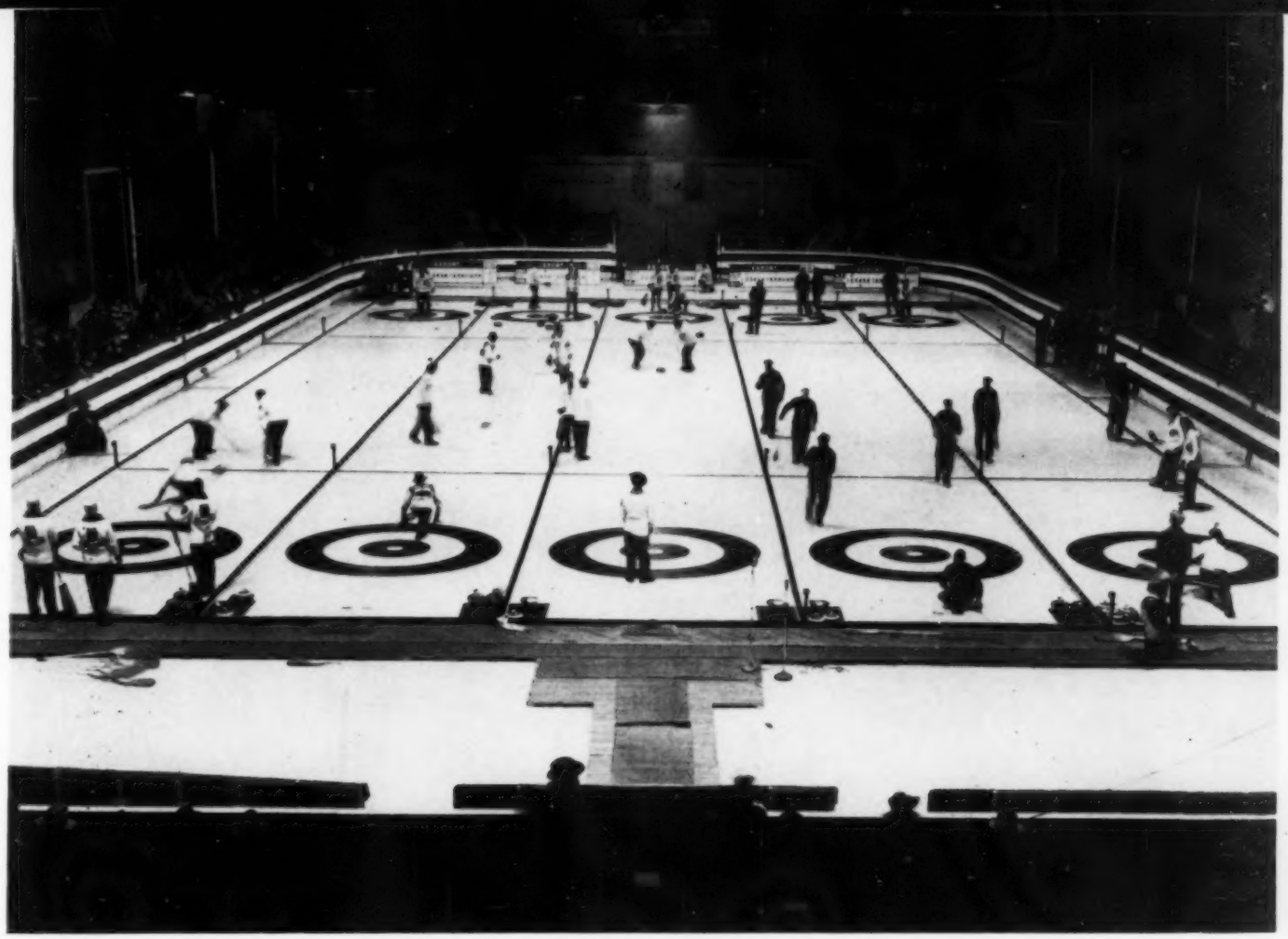
Special functions stud the calendar of social events during the winter season. Not least of these are the military balls at which Alberta's débutantes frequently are presented to the

Winter carnivals are a colourful feature of the season's activities in Alberta.

Lieutenant-Governor. The dashing scarlet coats, swagger of regimental kilts and gay hues of the ladies' gowns make these affairs of brilliance. Besides such formal gatherings, there are friendly casual country club and hotel socials and vigorous care-free square dances in almost every community. Performances by capable and proven theatrical companies, symphony concerts, and recitals by visiting artists of international renown round out the program.

The magical transformation worked upon the landscape by winter is not easily conveyed to those who know the province only in its summer greenness or autumn colours. In the mountains the dazzling white snow, piled to ten-foot depths, is shaped and sculptured by the wind. Upon it bright sunlight and blue shadows weave extravagant patterns, and the deep green of the fir trees stands out sharply against the glistening whiteness. More than one man,

Never too young to learn. A youthful skier in outsize goggles at Banff's Mount Norquay.



Almost every community has a curling rink and local bonspiels are well attended.

awed by the scene, has wished for the eyes of an artist and the tongue of a poet.

In Alberta all roads lead to this wonderland. The paved highways are kept free of snow at all times. The province is served by both Canadian National Railways and the Canadian Pacific Railway. Airlines serve the major centres, and there is regular bus service to resorts.

Skiing by daylight and under floodlights, too, is increasing in popularity with citizens and thousands of visitors. The mountain ski trails and long, high, open slopes on which so many take their thrills and spills are also the scene of numerous championship competitions every year.

Banff National Park is the most outstanding ski centre of Western Canada. Ski patrols keep constant watch to prevent avalanche accidents. Here the skier may glide for hours through unmarked snows, warmed by the brilliant

Beginners learn to ski on gentle slopes with tows at Lake Louise, Jasper, Banff and other skiing centres.

An expert skier, skimming the brink of a cliff on Mount Norquay's downhill run, has a fleeting view of the beautiful Bow River Valley with Mount Rundle in the background.

Crowds flock to Alberta's ski resorts on weekends and holidays. There are good roads to skiing areas and buses operate on regular schedules.

sunshine of high altitudes and vigorous exercise, and exhilarated by constantly changing vistas of snow-capped mountains.

Banff, itself, offers ample facilities for the beginner but is famous for its two-mile downhill course with a stiff drop of 2,000 feet. The slope, recommended for experts only, is on majestic 8,725-foot Mount Norquay, five miles from Banff, reached easily by car or bus over a well-maintained road. A modern electric chairlift, 3,240 feet long, rises through a vertical distance of 1,300 feet. Although considered one of the steepest in the world, the lift is designed to give the highest degree of safety and stability. Rope tows are conveniently located for the novice and intermediate skier. Some of the best Canadian ski instructors conduct classes on several practice slopes at the 6,000-foot level.

Sunshine Lodge, sixteen miles south-west of Banff, offers a variety of high-country skiing. The tricky slopes of Twin Cairns, Carlyle Ridge and Standish Hump test even the most

Shielded by a snow fort which reflects the warm rays of the sun, a group of skiers relax at Sunshine Village near Banff.

Ski patrols in the Rockies use helicopters and two-way radios to report upon skiing conditions and prevent accidents where avalanches might occur.

A chair-lift, rising 1,300 feet, carries skiers to the upper slopes of Mount Norquay. In summer tourists use it to enjoy the view.

Mount Norquay's downhill run (left of slope), jump platform (centre) and chair-lift (right). The "giant slalom" course commences high on the left side.

capable skier. For those who like to combine photography and skiing there are day excursions under the direction of expert guides. In the snow fields of this area, at a 7,000-foot altitude, there is unparalleled alpine skiing on a variety of slopes, from the gentle practice type to the kind for breath-taking downhill dashes.

The picturesque Lake Louise area has some of the best deep snow for downhill runs in the Rockies. The famed resort is forty miles north-west of Banff. Five miles up the Ptarmigan Valley, Mount Temple Chalet, at 6,000 feet, is the starting point for skiing adventures in Richardson Bowl and on Jackson Hill. A 3,700-foot tow-bar lift rises from the chalet to the top of Larch Hill, a shoulder of Silvertip Mountain. Seven miles north-east of Mount Temple Chalet there is skiing on the Drummond and Douglas Glaciers, favourites of the Mount Skoki area. The comfortable Skoki Chalet is located at the 7,000-foot level.

The season at both Mount Temple and Mount Skoki extends from Christmas to late spring and early summer. Here the skier can climb to almost any height for a run that leads back to the lodge door. Drummond Glacier drops 5,000 feet over several miles. Douglas Glacier has a descent of one and three-quarter miles over 3,000 feet. The district's numerous practice slopes and fine slalom course are very popular.

Perhaps the highlight of the winter season at Banff is the week-long Banff Winter Carnival, held in February. A masquerade ball, the crowning of a Queen of the Snows, parades, fun and frivolity are features of this celebration. The carnival queen, chosen from entrants representing a number of American and Canadian cities, is crowned in a huge sparkling blue ice-palace built especially for the occasion. Statues carved of ice decorate the streets. Indians attired in colourful regalia make their contribution to the spectacle. During the week there are ski-jumping contests, hockey games, a curling bonspiel, swimming parties at Upper Hot Springs, and an international collegiate ski tournament.

The International College Ski Meet at Mount Norquay is considered one of the finest

Banff's winter carnival queen reigns from an icy throne on the frozen Bow River near the heart of the popular mountain resort.

competitions in North America. Teams from ten Canadian and American universities take part in the four-way meet. Another annual event increasing in popularity is the James I. Brewster Memorial Race during the last weekend of skiing at Sunshine Lodge.

Alberta's best resort for "long season" skiing is Jasper National Park, 235 miles west of the capital city, Edmonton. Here the season extends usually from mid-October to June on glaciers, while slope-skiing is enjoyed from mid-December to mid-April. The resort town of Jasper serves as the centre for more than 4,000 acres of park. Three miles from the town the slopes of Whistler Mountain provide excellent downhill skiing. A modern Pomagalski tow enables skiers to descend at two intermediate points. Comfortable chalets and cabins deep in the seclusion of the Rockies are also available in winter. Tonquin Valley, and the Maligne Lake and Mount Edith Cavell areas are noted throughout the skiing fraternity for fine open slope, deep snow and glacier skiing.

Hundreds of sightseers and skiers attend the Jasper Winter Carnival, held for two days late in February each year. Sponsored by the Kiwanis Club, it includes a colourful ice show with a queen-crowning ceremony, a variety of winter games, and other entertainment. At the inter-provincial high school ski meet at Jasper in February the best teams from Alberta and British Columbia compete for honours.

Another of the province's fine alpine skiing areas is the Crowsnest Pass district, eighty-

A skier's dream of country for open slope skiing—the Jasper Park region of Alberta.

eight miles west of Lethbridge. The Crowsnest Pass Ski Club holds an annual meet early in the year. Cleared slopes adjacent to the town of Blairmore are the centre of skiing activities. The main downhill course begins at approximately 5,300 feet, dropping 1,000 vertical feet over a 4,000-foot run. A 1,300-foot rope tow is operated for the benefit of skiers and spectators. One lower slope is floodlit for use at night. Spring skiing is unexcelled in the Mount Coulthard (8,688 feet) area at the 7,000-foot level. Skimming along high-country slopes is proving popular, although guides are necessary.

Canada's "Sun Valley" is located in the province's fourth major skiing area—Waterton Lakes National Park. Pass Creek Valley, which resembles Idaho's well-known resort in many ways, is only three miles from the town of Waterton. Excellent skiing can be enjoyed on the outskirts of the town and throughout the vicinity, also. Waterton Lakes spring ski tourney, about 24 May each year, attracts many leading Canadian and American skiers, as well as hundreds of spectators. It is the last competitive ski event of the year.

Skiing and fishing can be combined in Alberta. Many trails lead to attractive fishing places. Cameron Falls in the Waterton Lakes district.

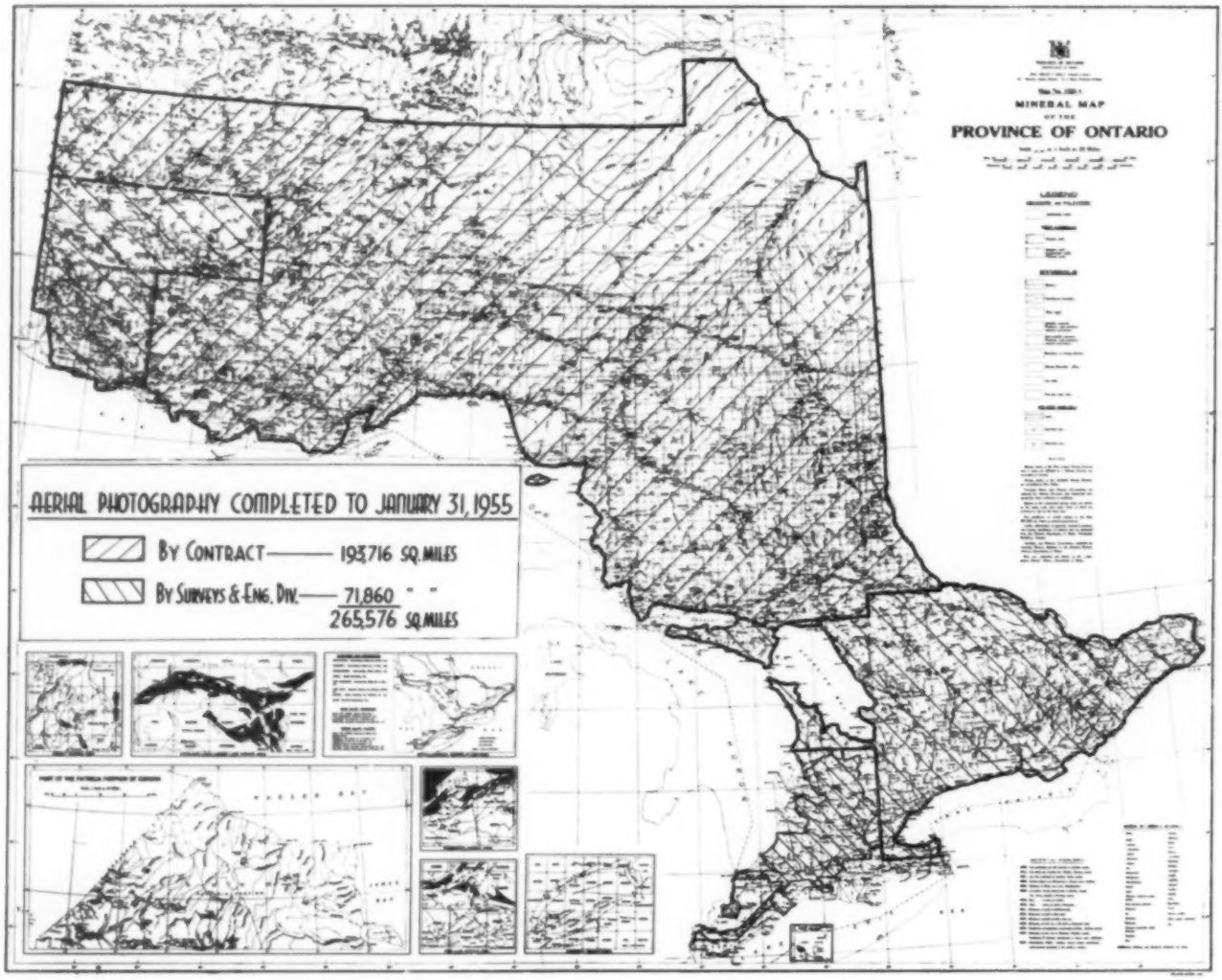
Perfection of form is demonstrated during a jumping competition at Edmonton.

One of the more spectacular events of Alberta's ski season is the Northern Alberta Ski Jumping Championships in February each year at a centrally located ski-jump in Edmonton. Crowds of close to 10,000 spectators have been recorded there. Snow Valley, three miles south-west of Edmonton, is used by the city's skiers. There is regular skiing by floodlight, too.

A new ski area, on Medicine Lodge Hill, ten miles west of Bentley, has been opened in the Lacombe-Bentley area. A 1,560-foot rope tow, designed and built by club members, carries beginners slowly up the practice slope and whisks experienced skiers to the fast and varied upper reaches of the hill.

The province's largest ski clubs are located at Calgary, Edmonton, Blairmore, Camrose, Canmore, Lethbridge, Nanton and Red Deer. For the ski vagabond, however, there is excellent skiing at minimum cost and with comfort in informal lodges that reverberate with the buoyant spirits of exhilarated skiers and where evenings are spent in well-deserved ease before glowing fireplaces.

Snowmobiles carry skiers into remote regions: in Jasper National Park, to Maligne Lake, Marmot Basin, Mount Edith Cavell and the Columbia Icefield.


MINERAL MAP
PROVINCE OF ONTARIO
AERIAL PHOTOGRAPHY COMPLETED TO JANUARY 31, 1955
BY CONTRACT —— 193,716 SQ. MILES
BY SURVEYS & ENG. DIV. —— 71,860 " "
265,576 SQ. MILES

A Second Look at
Aerial Surveys in Ontario

by J. M. BISHOP

THIS ARTICLE, like the one written for this magazine in May of 1946, deals only with aerial surveys carried out by or for the Department of Lands and Forests of Ontario. In the eleven years since that article was written there has been a very great increase in the area covered by vertical photography in the province. The total now stands at 272,706 square miles, which is almost two-thirds of the total area of the province.

Almost all of this air survey work was undertaken as the first step in the forest resources inventory project which was launched by this province in 1946. A large portion of the work has been done by private air survey companies under contract with the Department of Lands

The type of aircraft used in the early days of aerial photography.

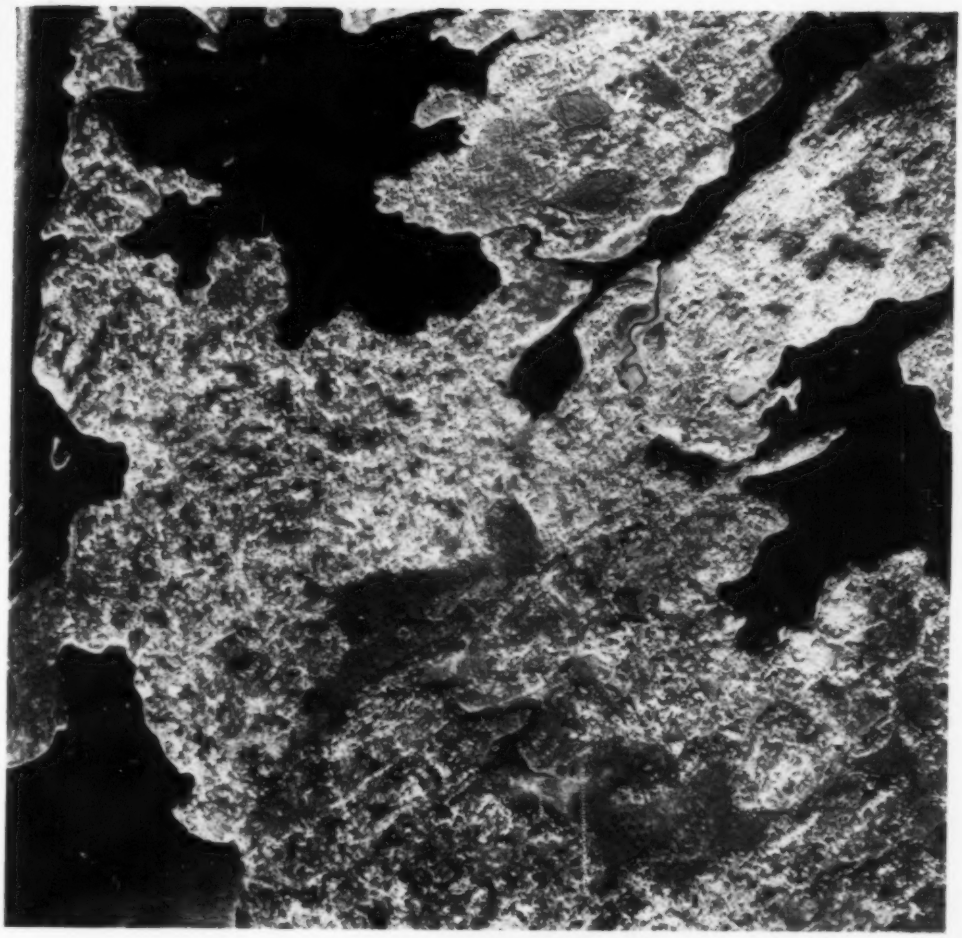
and Forests. Some 78,990 square miles, however, have been covered by the Aerial Surveys Section of the Division of Surveys and Engineering. The proportion of the total area done under contract and that done by the department's own staff is shown on the key map on page 78.

Since a forest type map made up from aerial

Now the De Havilland Otter is used. Here one of these versatile aircraft, on skis, is servicing a winter survey party running a base line for aerial photography control.

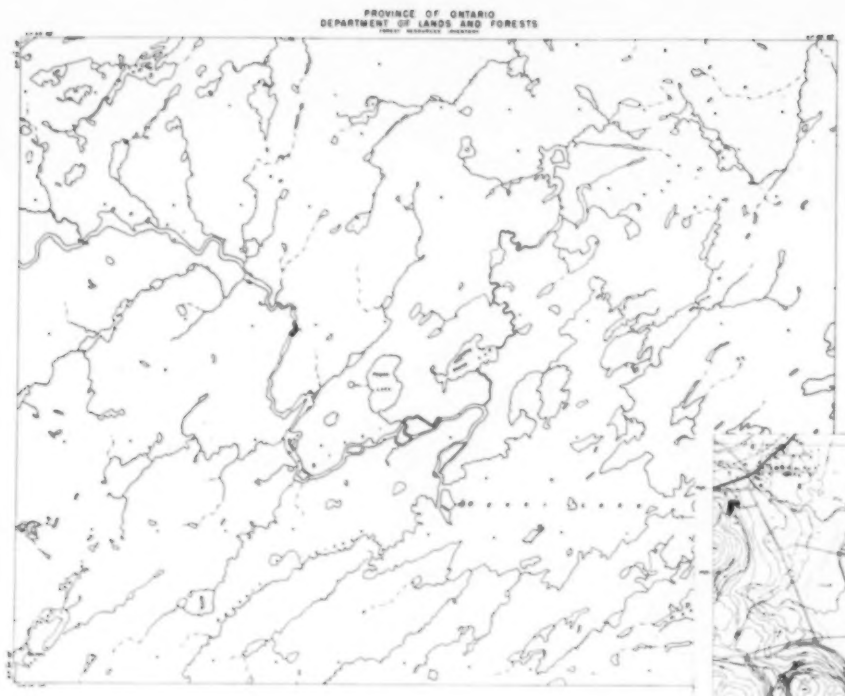
Aerial photography covers the cities...

... the farms ...



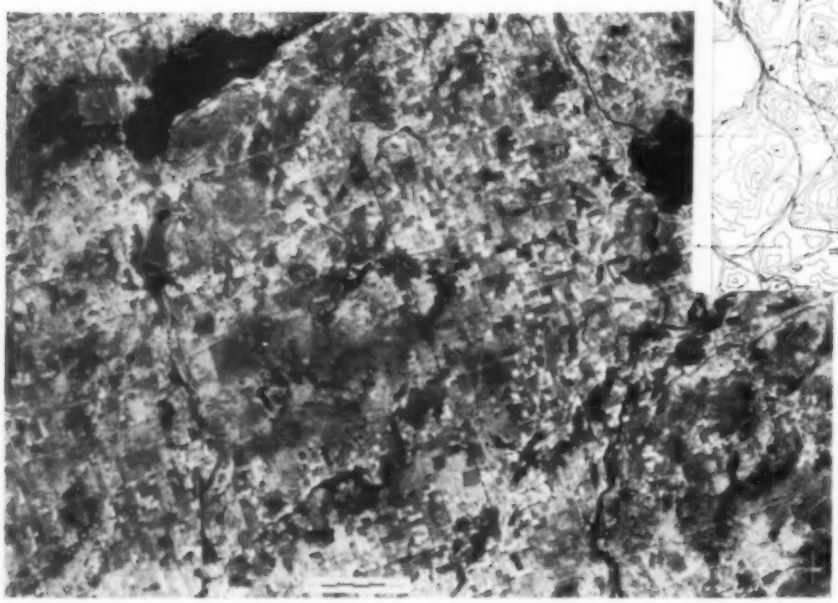
. . . the forests . . .

. . .even the waste-lands.



From aerial photographs they make planimetrics . . .

. . . contour plans . .

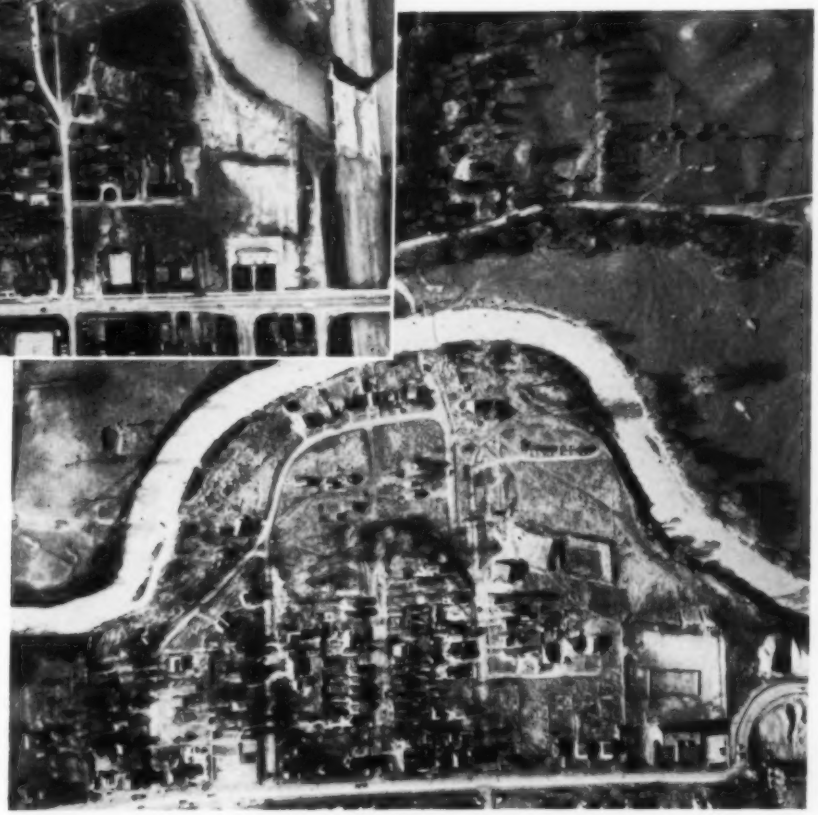


. . . and mosaics.

photographs carries such a wealth of detail, it can become rather quickly out of date. For that reason it has been necessary to re-photograph areas that have been burnt o~ cut over since the original photographs were aken and, for purposes of revision, the staff of the department has covered about 17,000 square miles in the past five years. During the same period other areas have been photographed for other departments of the provincial government and for the Hydro-Electric Power Commission of Ontario. No work for private concerns is undertaken.

Most of these air surveys are planned some time in advance, and flight maps for the area involved can be prepared. At times, however, the department is called upon to undertake a job on very short notice. An example was the

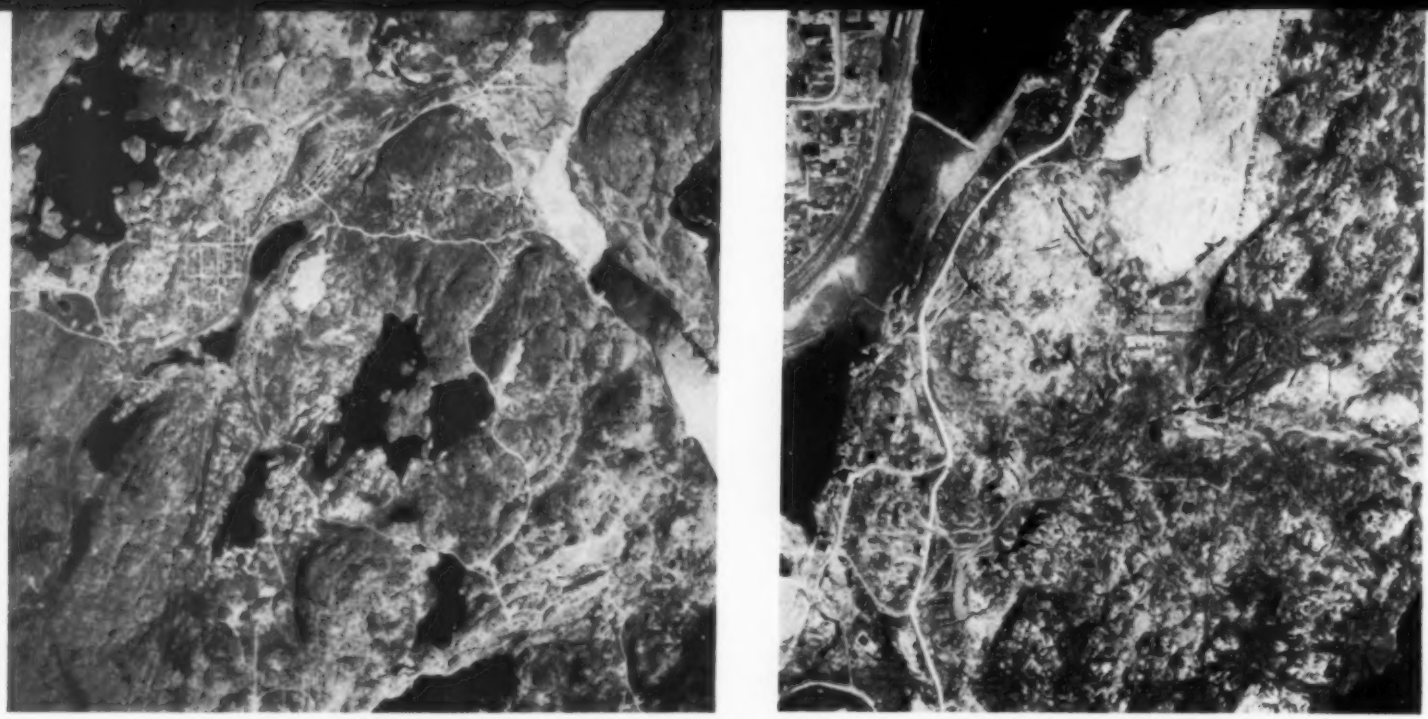
Checking flood damage by aerial photography. Photograph clearly shows the damage caused by the flash flood which followed hurricane "Hazel". Note the new channel, and complete disappearance of a number of homes.



The same area before hurricane "Hazel".

survey of the Etobicoke and Humber Rivers to help in assessing the damage done in October 1955 by hurricane "Hazel". Air photographs were called for at one o'clock on the afternoon of Monday, 18 October. The film was exposed that afternoon, developed and numbered that night, and two sets of prints — 420 of them — were supplied before four o'clock on Tuesday, 19 October. Two days later photographs were taken of the Holland Marsh area, where so many people had been made homeless by the flood which followed the storm.

The aeroplane used for the department's photography is a De Havilland "Otter" supplied with pilot and engineer by the Department's Air Service Division. It has the installation necessary for communication between camera-operator and pilot and is also equipped with an "automatic pilot", to aid in maintaining altitude and holding direction. It is important, when possible, to have the same pilot assigned to photography each season, as training a new man in this exacting type of flying can take a long time and be expensive.

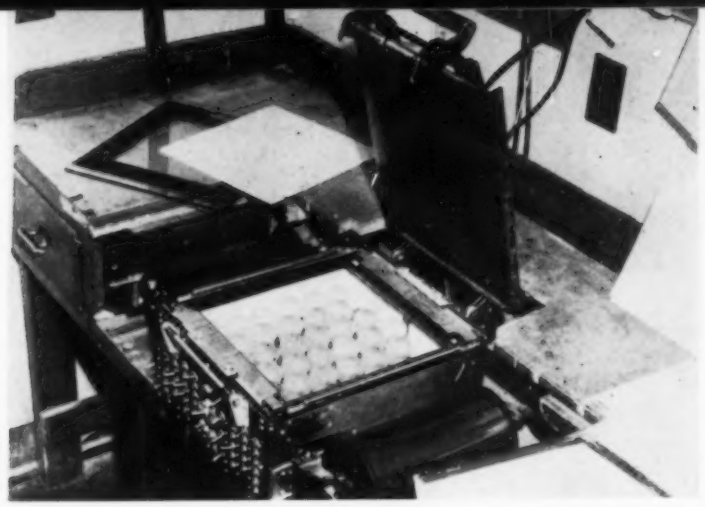


Aerial photographs are taken at different scales for particular purposes, or for particular government departments. The photograh on the left shows a portion of the Cobalt area on a scale of 2,000 feet to the inch; the photograph on the right, taken for the Department of Mines, is on a scale of 400 feet to the inch.

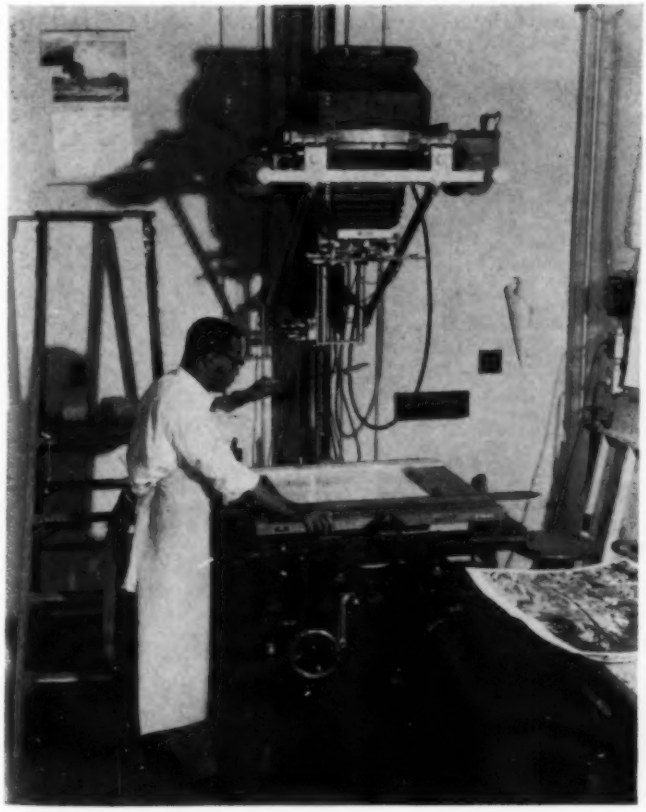
The Aerial Surveys Section has five cameras: four Fairchild K-17's and one Williamson Eagle Nine. The film comes in rolls 200 feet long and ten inches wide. All exposed film is processed by the section's staff. The darkroom is equipped with two Fairchild-Smith film-developing units and three Fairchild-Smith film-dryers. The section also has five Morse printers, two Logetronic printers, three Pako print-washers and three Pako print-dryers. The present output is approximately 65,000 contact prints a year. A great deal of enlarging is also done and considerable copy negative work, keeping six operators busy.

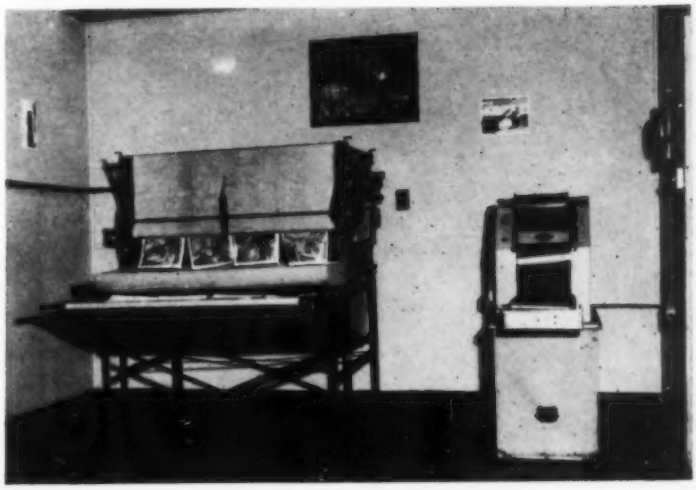
Four aerial photographers are on the staff. One of them has flown in all parts of Ontario, except the farthest north regions, for thirty years and knows the province as few men have

The equipment used in Otter aircraft for taking aerial photographs to scale as described in this article. The large camera (centre) fits into an aperture in the floor of the aircraft's cabin. Held by the cameraman is a light-meter. Left to right, in front of him, are a film tin, drift sight, intervalometer, the camera, and a spare magazine.



Amateur photographers will recognize the equipment and processes on this page: (top, left) unit for developing film; (top, right) contact printing; (right, centre) trays and tank for developing, fixing and washing prints; (lower right) print-dryer and film-dryer; and (lower left) the outsize enlarger.

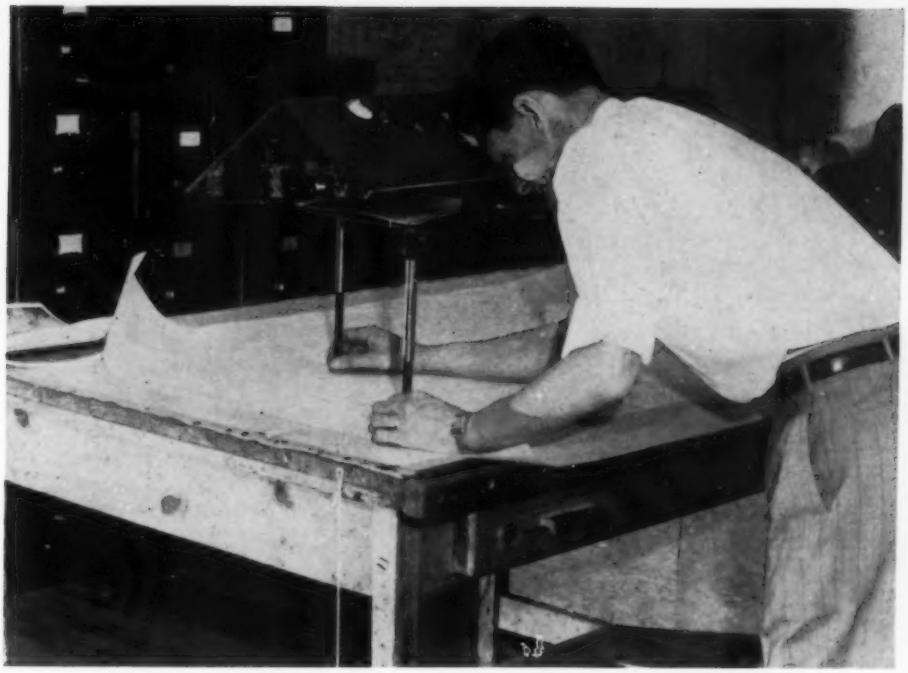




Industrial corporations and many individuals purchase aerial photographs of their properties, such as this one of a pulp and paper mill and mill town at Iroquois Falls.

Different methods of printing are used for various purposes. Above, on the left, is a contact print; on the right is an "unsharp masked print" from the same negative. Note the extremely fine detail in the latter.

Here a photogrammetrist, with the aid of a stereoscope, reads aerial photographs in three dimensions.



The sketchmaster in use at the department's aerial surveys headquarters at De Havilland Airport, Toronto.

had the opportunity to know it. These photographers are seldom all out in the field at the same time, so can relieve each other as the need arises. When not on a survey operation, they can engage in various phases of the mapping work at the head office.

The mapping staff consists of fourteen persons. The mapping procedure followed is known as the "slotted templet" method. It would be fruitless here to go into details about this system. It is sufficient to say that templets are cut for all photographs in a survey, laid down on a special floor and tied in to control points plotted to the proper scale from the original notes of ground surveys already made in the area. Planimetric maps, at the scale of four inches to the mile, are produced and transmitted to the Timber Management Division, where the timber types are added to the map detail. Among the many instruments designed to aid this process is the stereoscope, which permits the reading of aerial photographs in three dimensions, and facilitates the marking of lines of elevation on the photographs. Another valuable instrument, the sketchmaster, is used in transferring topographical and other detail directly from the photograph to the base map beneath, and in mapping to the scale of the prints.

For Southern Ontario, however, mosaic photograph panels are being prepared, instead of planimetric maps. These panels are at the

Here a young lady of the staff is assembling a mosaic, a tricky process, because the prints must be set in place when wet and shrinkage must be allowed for.

After a mosaic has been assembled, much pertinent detail must be lettered in by hand in a neat and legible manner.

Another phase of map compilation is "pointing" or marking control points on the photographs and their overlapping correlatives.

Templets, each representing an aerial photograph, are punched by this machine in such manner that they cannot be misplaced in compilation.

The templet lay-down floor, about fifty feet by thirty feet, on which compilations are pegged down.

The last stage of map compilation is the final painstakingly careful tracing, an arduous but vital task in today's accurate map production.

same scale as the map sheets plotted for Northern Ontario and cover an area fifteen minutes east and west by seven and one-half minutes north and south, comprising an area approximately one hundred square miles. The area that will eventually be covered by these mosaics is roughly that part of Southern Ontario which lies south of the forty-fifth parallel of latitude.

While the forest resources inventory is the main objective of this air survey program, there are many other worthwhile uses for the photographs. There is, for instance, a fast-growing interest in aerial photographs for soil studies being made by both the Department of Lands and Forests and the Department of Agriculture. They are studied extensively for town-planning, proper land use and, as indicated before, to assess flood damage and erosion. The Department of Planning and Development uses them for river valley conservation projects and the Highways Department and the Hydro-Electric Power Commission of Ontario use preliminary air surveys in a very great deal of their planning.

One special feature of the Aerial Surveys Section's work has been of particular interest to the Hydro-Electric Power Commission. That is experiments in turning out prints and enlargements by the "unsharp masking" process. A great wealth of detail, formerly hidden by the shine of reflected light from sandy areas, has been brought out by this type of print. The difference between an ordinary contact print and one made by the "unsharp masking" process from the same negative may be appreciated by examining the photographs on opposite page.

In April of 1956 the last portion of the department's ten-year photography plan was completed. There is now photographic coverage from James Bay to Pelee Island, and from Quebec to Manitoba. These photographs contain a vast fund of information of real value to the people of Ontario.

All photographs are from the files of the Aerial Surveys or Information and Education Divisions of the Ontario Department of Lands and Forests and were taken by members of the staff.

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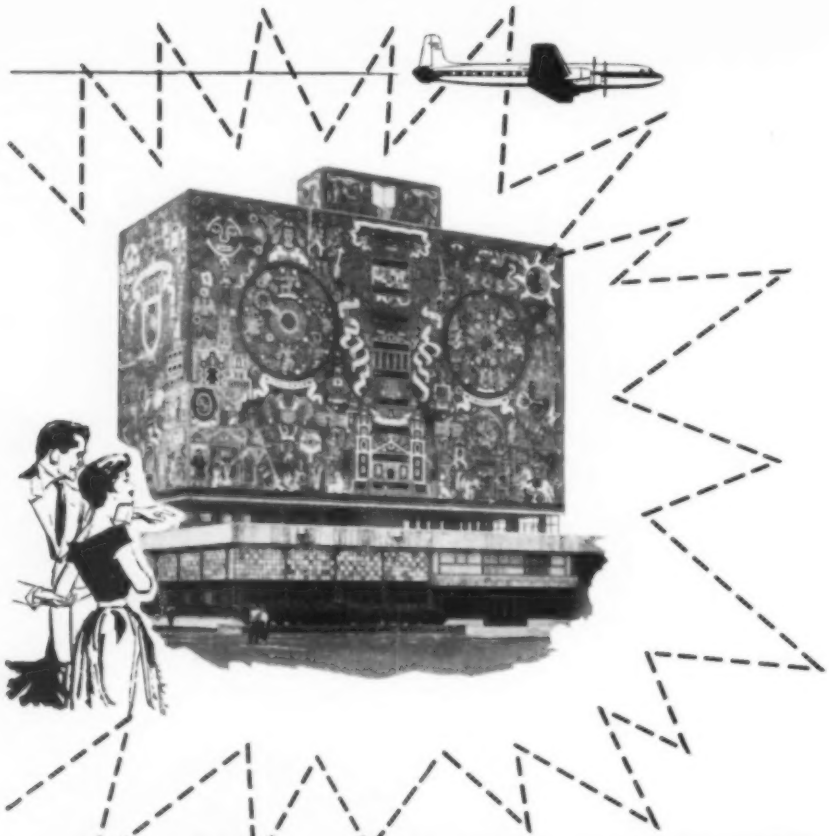

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EDITOR'S NOTE-BOOK

G. B. Williams (*The Trans-Canada Highway*) has been Chief Engineer of the Development Engineering Branch of the Department of Public Works at Ottawa since June, 1955. Prior to that time he held various posts in Manitoba's Department of Public Works. Mr. Williams has had many years of experience in highway engineering and associated fields. Part of his present duties is supervision of the Highway Division working with provincial governments on construction of the Trans-Canada Highway.

* * *

Ralph Moore (*Winter Sports in Alberta*) has been in the service of the Alberta Government for close to forty years. Since 1948 he has acted as Deputy Minister of Economic Affairs. In this capacity he is actively concerned in the development of the province's important tourist industry.

* * *

J. M. Bishop (*A Second Look at Aerial Surveys in Ontario*) has been with the Aerial Surveys Section of the Surveys and Engineering Division, Ontario Department of Lands and Forests, since 1923. During that time he has observed many changes in the size of the section and its functions. Some of these are described in his article.

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THE TRAVEL CORNER

St. Vincent In The Windward Islands

Down where the Trade Winds blow lie the Windward Islands, a group of small islands not far from the better-known West Indian resorts but less frequently visited by outsiders. Their beaches, washed by the limpid blue Caribbean waters, are litter-free and uncrowded. Inland rise wooded mountains separated by valleys rich in flowers, shrubs and tall tree ferns. Their climate is equable: the average seasonal fluctuation in temperature is about five degrees. Tourist accommodation is comfortable in modest hotels and guest homes that are less expensive than in the more popular Caribbean centres. But visitors must look elsewhere for organized entertainment, spectacles and café society. Here the pastimes are mainly swimming, yachting, angling and spearfishing.

The Windward Islands form the southern chain of the Lesser Antilles in the West Indies. The British group consists of the colonies of St. Lucia, St. Vincent and Grenada in the Windward Islands and Dominica in the Leeward Islands, with the seat of government in St. George's, Grenada. It is interesting to note the large number of students from the area who attend Canadian colleges and universities — over 500 last year.

The British colony of St. Vincent includes St. Vincent Island and the northern Grenadines and has as its capital Kingstown. A roughly oval-shaped island about sixty-eight miles north of Grenada and about thirty miles south of St. Lucia, it is famed for its scenery, arrowroot industry and Sea Island cotton crop. The cotton has been grown there since 1901. Most of it is sent to Lancashire, England, for use in the fine cotton spinning industry. The principal exports, besides cotton and arrowroot starch, are groundnuts, bananas and coconuts.

Much of the island's rolling terrain is under cultivation. Natural vegetation is restricted mainly to the mountains in the interior and the west coast. Like many other islands in the region, St. Vincent is of volcanic origin. Its only active volcano, La Soufrière Mountain, last erupted in 1903, denuding its slopes of vegetation. Plants now cover the walls of the crater down to the edge of the lake many hundred feet below. Although the island lies in the hurricane belt and from time to time suffers extensive crop and property damage, residents usually receive sufficient advance warning to take safety measures.

St. Vincent first came to the attention of Europeans when Columbus reported sighting it in 1498. However, it escaped foreign domination until late in the seventeenth century when the French, after settling an internal conflict between its original Carib Indian inhabitants and descendants of shipwrecked African slaves, established settlements there. In 1762 the British captured it. Then colonization began in earnest. For many years the history of St. Vincent was stormy, but the independent spirit of the populace remained unaffected. Now, without violence or animosity, it has found appropriate expression: St. Vincent, along with other British West Indian colonies, is to become part of the new Caribbean Federation, whose first central government will be elected in 1958.

At the head of broad Kingstown Bay on the island's south-west coast is the colonial capital, Kingstown, a clean orderly city where life proceeds at a leisurely pace. Its famous Botanic Gardens, established about 1763, are the oldest of their kind in this hemisphere. Captain William Bligh, after surviving the mutiny on *H.M.S. Bounty* in 1787, sailed there six years later in another ship, the *Providence*, bringing specimens of the breadfruit tree and a collection of exotic plants for the Gardens. The origins of some of the plants and trees growing there today can be traced to these.

General view of the waterfront of Kingstown, Capital of St. Vincent Island.
C.N.R.

Springtime in the Canadian Rockies

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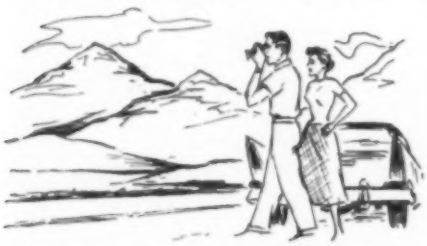

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A-1

KNOW ALBERTA CANADA BETTER

(*Continued from previous page*)

Among the growing number of yachtsmen cruising the Caribbean the Windward Islands are gaining in popularity. St. Vincent is a particular favourite because of its good anchorages and sandy beaches and the pleasing vistas on its leeward shore of terraced fields bearing crops of cotton and arrowroot.

There are regular steamship sailings from Canada and the United States to the main Windward Islands. Schooners carry passengers to the smaller island dependencies. But the ship best known to those who live in the Windwards is the ols *S.S. West Indian*, operated by the West Indies Navigation Company, which periodically sails in and out of island ports to and from Jamaica, the Leeward Islands and British Guiana.

AMONGST THE NEW BOOKS

Chansons Folkloriques Françaises au Canada

by Marguerite and Raoul d'Harcourt

(Presses Universitaires Laval, Quebec. $6.00)

Two French musicologists, Marguerite and Raoul d'Harcourt, well known amongst folklorists for their works on Inca music, have recently had a collection of French folksongs of Canada published jointly by the *Presses Universitaires Laval* in Quebec and the *Presses Universitaires de France* in Paris. The volume is a large one containing 240 songs drawn from Marius Barbeau's valuable collection at the National Museum of Canada, Ottawa.

The reader at first glance, is surprised to learn that there is a better survival of French folksongs on the banks of the St. Lawrence River than in France. As a matter of fact, several decades ago scholars and collectors were already noting with regret the rapid disappearance of folksongs and other traditional wealth of the French cultural heritage. As far back as the middle of the last century, large compilations of French popular songs were published in Paris as well as elsewhere in France. However, for lack of first-hand material, new works containing original documentation soon became rare and gradually made way for comparative and historical studies.

The songs collected in France often show weakness in the quality of the musical texts; but such is not the case with folksongs collected in French Canada. These have escaped

Erratum Vol. LIV, No. 1, Jan. 1957, p. 36, 2nd column, line 16: for Madoc, Ontario read Marmora, Ontario.

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retouching by learned people and seem to have better retained certain archaic traits. Other factors which have also contributed to the preservation of oral traditions in French America are the isolation, often voluntary, of the French rural communities in the face of greatly urbanized English groups, and various socio-cultural factors which have impeded the inner renewal of the French culture on the banks of the St. Lawrence. In short, the French Canadians were induced by a combination of factors to live on their past acquirements and faithfully to preserve the traditions implanted by the settlers of the seventeenth century.

However, no one ever suspected until fairly recently the practically inexhaustible nature of that wealth. When Ernest Gagnon, the first Canadian to make such a collection, published his book of one hundred Canadian songs in Quebec in 1865, the field was thought to have been exhausted. It took all of the flair and the sense of tradition of a Marius Barbeau to realize the extraordinary importance of the various aspects of

(Continued on next page)

The Canadian Geographical Society

ANNUAL MEETING

The Society will hold its twenty-eighth Annual General Meeting in the Lecture Hall, National Museum of Canada, Ottawa, on Thursday, 21 February 1957, at 8.30 p.m.

Speaker

His Excellency, The Right Honourable Vincent Massey, Governor-General of Canada

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(*Continued from previous page*)

French cultural survival in America.

In the course of his investigations in the counties of Charlevoix, Chicoutimi and Beauce in 1916, Barbeau collected more than 500 folksongs and numerous tales, and the melodies were recorded by phonograph. This was the beginning of the very important collection of the National Museum in Ottawa, to which so many varied contributions were to be added later, including the valuable series collected by Barbeau in Temiscouata and the Gaspe Peninsula in 1918 (more than 1,200 items), at Chaleur Bay in 1923 (nearly 500 songs), on the Isle of Orleans in 1925 (also 500 songs), in Charlevoix and the Gaspe Peninsula in 1936-7 (400 songs), and in other French Canadian districts. However, Barbeau was not a lone worker in this field. During the period from 1917 to 1925, the National Museum received valuable contributions from E. Z. Massicotte (more than 2,000 songs collected in Montreal among folk-singers born in various districts of the Province of Quebec) and from Reverend Father Archange Godbout who collected material in the Lotbinière, Portneuf and Berthier areas, as well as a series assembled by Adelard Lambert in the Berthier-en-Haut and New-England regions. The songs recorded on wax cylinders (Edison phonograph) by folklorists of that generation exceed 4,600.

The texts published by Mr. and Mrs. d'Harcourt were selected from a compilation of 1,000 songs collected from 1916 to 1918 by Marius Barbeau and E. Z. Massicotte in several districts of the Province of Quebec, and recently reproduced on disks. The methods used by Mr. and Mrs. d'Harcourt in the presentation of these texts differ considerably from the techniques used by Canadian specialists. The latter, following the example of the French folklorist Doncieux, concentrated on the collation of the largest possible number of versions. The simultaneous study of the multiple versions aimed at eliminating certain differences or oddities in the texts due, for instance, to the imperfection inherent in collective memory or to singers' whims, and at establishing a definitive version which was then matched with a chosen melody. In the d'Harcourt book, following a short review of the popular singers of Canada, placing the songs in their social and historical context, are chapters on the musical composition of the songs, scales and modes, styles, rhythms and movements, and forms. One learns that the survival of Gregorian modes is more evident in Canada than in France. In the preface, Olivier Messiaen notes the presence of neums and melodic ornamentations in a great number of songs. The modes of chant most frequently found are the mode of D, the mode of G, and less frequently the mode of F. The Greek dorian is absent, and the mode of C is found in an unusual form.

By way of conclusion, it may be said with Marius Barbeau that while the work itself was written by French authors, the subject matter was supplied by the rural people of Canada and that close co-operation will add a new tie to those which have never ceased to exist between Canada and France.

ASEN BALIK

* * *

California And The Southwest

Edited by Clifford M. Zierer

(John Wiley & Sons, Inc., New York. $11.25)

John Wiley and Sons, Inc. PUBLISHED now published their third regional geography of a section of the United States of America. The two PREDECESSORS from the same publisher as this present book were *The Pacific Northwest* and *The North American Midwest*. Like these books, *California and the Southwest* is written by a number of separate authors, thirty-one in this case, with an editor responsible for overall planning. The editor of this book is Clifford M. Zierer.

With a series of these regional geographies appearing on the market I think that it is a good time to ask just what is their place in the library of geographic literature. Their main value seems to lie in the fact that

they must be considered as useful reference works on distinct portions of the United States. They provide more information on a particular region than can be obtained from the standard single volume references on the United States or North America; yet they do not become too technical for the average reader. Hence they provide an intermediary between original sources and generalized reference works. As reference books they have a place in all libraries concerned with geography.

A second value is as a textbook. There would appear to be little outlet for them as such in Canadian universities where the cost alone would prohibit the use of several specialized texts in the study of larger areas. In American universities, however, where the quarter or semester system prevails, they would be extremely useful texts for an introductory course on the local region. These introductory courses at the sophomore level are a valuable introduction to the study of regional geography.

In the volume under discussion in the present review the arrangement of material has been systematic. The reader is first presented with the physical characteristics of the region, then the cultural aspects. This arrangement is, of course, standard and conventional. The volume is well illustrated with photographs and maps. The various chapters are well written and each one will stand by itself as a separate and complete article.

Probably the one major omission in the book is a chapter dealing with the dynamics of California and the Southwest. This region is one of the most rapidly expanding areas in North America. It would have been a valuable addition to the book if the opening chapter had set the stage of the present-day Southwest with a discussion of the dynamic features which have brought about this recent and rapid expansion. From this start the reader could have been led through all the various background factors which distinguish the Southwest as a particular and interesting region.

As with another similar regional study which I reviewed recently this book would have been more complete had there been a final concluding chapter which would have served to place all the aspects of the region in a proper perspective.

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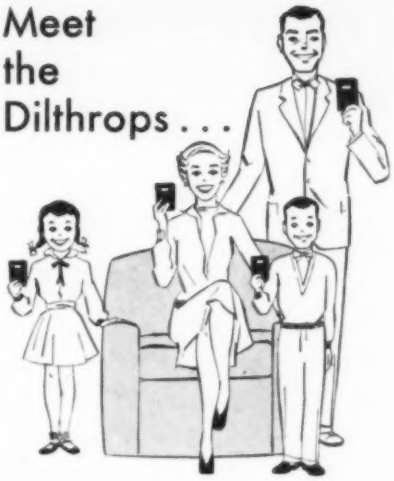

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